Disclaimer

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Under The Patronage of
The Minister of Health of the Republic of Tunisia

Twentieth PanAfrican Course on
Interventional Cardiology PAFCIC 2019

September 12-14, 2019
Movenpick Congress Center, Lac Tunis, TUNISIA

PAFCIC Board:

- Founding President: Mohamed Ben Farhat
- Course Chairman: Habib Gamra
- Course Directors: Mohamed Ben Farhat, Habib Gamra, Horst Sievert
- Course Co-Directors: Kais Battikh, Fethi Betbout, Alain Cribier, Jean Fajadet, Harun Otieno, Augusto Pichard, Fehmi Remadi, Patrick Serruys, Mohamed Sobhy, Ahmed Suliman

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- Adel Bouraghda, Algeria
- Jean Fajadet, France
- Patrick Serruys, The Netherlands
- Fethi Betbout, Tunisia
- Fehmi Remadi, Tunisia
- Alain Cribier, France
- Augusto Pichard, USA

Live Transmission Sites:

- International Medical Center, Jeddah – Kingdom of Saudi Arabia
- Cedars Sinai Medical Center – Los Angeles, USA
- Sunninghill Hospital, Johannesburg, South Africa
- Kings College Hospital, London, United Kingdom
- Fattouma Bourguiba University Hospital, Monastir, Tunisia
- International Cardiology Center, Marrakech, Morocco
- Karolinska Institute, Stockholm, Sweden
- La Rabta Hospital, Tunis Tunisia
- Alexandria University Hospital, Alexandria, Egypt
- Tokyo, Japan
Thursday September 12th, 2019

10:30 – 12:30

Africa Fellows Summit
Update on Percutaneous CV Interventions
From A to Z – Part 1

Learning From Challenging Cases
Adult CV Interventions


Case 1: Complex Primary PCI
Khaldoun Ben Hamda, Tunisia

Case 2: PCI of a calcified long lesion
Slim Boudiche, Tunisia

Case 3: Unexpected hemodynamic instability during PCI
Rania Hammami, Tunisia

Case 4: Management of spontaneous coronary dissection
Habib Ben Ahmed, Tunisia

Learning From Challenging Cases
Pediatric CV Interventions


Case 1: Late percutaneous rehabilitation of a disconnected pulmonary artery in end stage pulmonary hypertension.
Maurizio Marasini, Italy

Case 2: TBD
Faouzi Maatouk, Tunisia

Case 3: Complex Recoarctation of the aorta
Fatma Ouarda, Tunisia

Case 4: Atypical aortic coarctation associated with abnormal circumflex coronary artery origin
Ilyes Neffati, Tunisia

Case 5: TBD
Dorra Abid, Tunisia

Case 6: For which fetal cardiopathy do we intervene and when?
Hela Messaed, Tunisia

14:00 – 15:15

Africa Fellows Summit
Update on Percutaneous CV Interventions
From A to Z – Part 2
Facilitators: Jonathan Byrne – Habib Gamra


WELCOME WORDS
Mohamed Ben Farhat, Tunisia

Introduction – session objectives
Habib Gamra, Tunisia

Vascular Access: Tips and tricks
David Kettles, South Africa

Distal radial access: a new approach for coronary angiography and intervention
Thierry Corcos, France

Guide catheters and Guidewires
Jonathan Byrne, UK

Lesion preparation: Selection of balloons, types and sizes
Michel Pansieri, France

Coronary physiology: FFR and IFR
Mohamed Jeilan, Kenya

Coronary imaging: IVUS/OCT
Mohamed Balgith, K Saudi Arabia

15:15 – 16:00
Live Transmission from Jeddah (KSA)
All about CTO

A case of antegrade and/or retrograde approach:
Khalid Tammam, Jeddah, KSA

16:00 – 16:30
COFFEE BREAK AND VISIT OF EXHIBITIONS

16:00
E Moderated Poster Session 1
Moderators: Mejdi Ben Messaoud – Selma Charfeddine - Rania Hammami – Walid Jomaa

16:30 – 18:30
Africa Fellows Summit
Update on Percutaneous CV Interventions
From A to Z – Part 3

Facilitators: Mohamed Jeilan – Ahmed Suliman

Chairs: Rachid Boujenah- Essia Boughzela - Mohamed Sobhy Abdoul Kane - Rachid Mechmeche — Abdallah Mahdhaoui - Roland Nguetta - Wissem Sdiri

Introduction – session objectives
Ahmed Suliman, Sudan

What is new in STEMI?
Mohamed Sobhy, Egypt

Antiplatelets and antithrombotics in the cath lab
Adel Bouraghda, Algeria

Tips and Tricks for foreign body retrieval
Jamel Langar, Tunisia

Bifurcation PCI: Tips and Tricks
Awad Mohamed, Sudan

Complex left main PCI: Tips and Tricks
Edoardo Camenzind, France

From head to toe: What is new in peripheral angioplasty?
Max Amor, France

Latest technical developments in interventional pediatric cardiology
Shakeel Qureshi, UK

Simplified TAVI: Tips and Tricks
Alain Cribier, France
Keynote Lecture

18:30 – 18:55

**Chairs:** Habib Gamra - Mohamed Jeilan – Mohamed Sobhy - David Kettles

The impact of socioeconomic status on the management of cardiovascular disease: Health is Wealth

*Bernard Gersh, USA*

Opening Ceremony

19:00

**Chairs:** Mohamed Ben Farhat – Mohamed Guédiche - Leila Abid – Saad Subahi - Horst Sievert – Habib Gamra

Friday September 13th, 2019

08:30 – 10:00

**CSI Africa @ PAFCIC**

**Facilitators:** Horst Sievert – Elyes Neffati


**Introduction – session objectives.**

*Horst Sievert, Germany*

**Live Transmission from La Rabta Hospital Tunis**

Aortic Coarctation Stenting

**Operators:** Shakeel Qureshi – Semi Mourali – Abdeljelil Farhati

How to improve surgery for congenital heart disease in Africa? *Abdelfattah Abid, Tunisia*

Renal denervation: is it a promising come back? *Horst Sievert, Germany*

Transcatheter Treatment of Pulmonary Atresia with Ventricular Septal Defect *Maurizio Marasini, Italy*

Sinus Venous ASD closure with covered stent *Shakeel Qureshi, UK*

10:00 – 10:30

**COFFEE BREAK AND VISIT OF EXHIBITIONS**

10:00

**E-Moderated Poster Sessions 2**

**Moderators:** Oussama Ben Rejeb - Hichem Denguir – Majed Hassine - Khadija Mzoughi

19:00

**New Devices For TAVI**

Live from Karolinska Institute

Stockholm - Sweden

Supported by Boston Scientific

**Facilitators:** Jonathan Byrne – Morshed Marouane

**Chairs:** Alain Cribier - Mohamed Balgith – Horst Sievert - Haker Lahidheb – Salem Kachboura – Abdoul Kane – Skander Ben Omrane – Imed Frikha
Keynote Lecture
The revolution of TAVI: The incredible journey continues  
Alain Cribier, France

12:30 – 13:00
Terumo Symposium
Live from Japan

Facilitators: David Kettles – Awad Mohamed


Introduction – session objectives  
Mohamed Jeilan, Kenya

Live transmission from Johannesburg  
Operator: Farrel Hellig

Debate:
- Symptomatic PFO should be closed  
  Horst Sievert, Germany
- There is no benefit in closing PFO  
  Jonathan Byrne, UK

Take home message  
David Kettles, South Africa

11:30 – 12:30
Terumo Symposium
Live from Japan


Ultimaster tansei: New evidence  
Hiroyoshi Mori, Japan

13:00 – 14:00
LUNCH BOX

Lunch Session
Techniques You Have Never Seen Before


Bariatric embolization: The next revolution in endovascular medicine?  
Horst Sievert, Germany

New tools for mesenteric ischemia intervention  
Max Amor, France

Treatment options for pseudoaneurysm of the ascending aorta  
Shakeel Qureshi, UK

Original tools for inferior vena cava reconstruction  
Jamel Langar, Tunisia

Treatment of left ventriculat aneurysms with the revivent technique  
Horst Sievert, Germany
14:15 – 15:15

Live Transmission from Kings College
London - UK
Complex case with calcium modification

Facilitators: Edoardo Camenzind – Kais Battikh


Coronary lithoplasty: state of the art
Jonathan Byrne, UK

15:15– 16:00

Live Transmission from International cardiology center – Marrakech
Left main PCI

Facilitators: Khalid Tammam – Mohamed Balgith


A case of Left main PCI
Operator: Fahd Chaara, Morocco

Current guidelines for left main PCI=
Ahmed Suliman, Sudan

14:00 – 16:00

Allied Professional Session


Panelists: Nashwa Abderrahim, Mejdi Ben Messaoud, Oussama Ben Rejeb

Introduction and session objectives
Mejdi Ben Messaoud, Tunisia

What should we know about STEMI management in 2019
Mohamed Chaouch, Tunisia

Left main intervention
Slim Boudiche, Tunisia

Cardiogenic Shock – How to manage in 2019?
Nashwa Abderrahim, Sudan

Tamponade in the cath lab: How to manage?
Nazim Megherbi, Algeria

16:00 – 16:30

COFFEE BREAK AND VISIT OF EXHIBITIONS

16:00

E-Moderated Poster Session 3

Moderators: Hedi Ben Slima – Sami Ouannes – Abraha Hailu – Marouane Mahjoub

16:30 – 17:30

Live transmission from International Cardiac Center Alexandria – Egypt
Acute Coronary Syndrome - CHIP

Facilitators: Mohamed Sobhy – Thierry Corcos


A case of ACS/ CHIP PCI
Operators: Amr Zaki
Mohamed Sadaka
Mohamed Lotfy

Current management of ACS in Africa
Roland Nguetta, Ivory Coast

Stent Save A Life Initiative in Africa: obstacles for progress and potential solutions
Mohamed Sobhy, Egypt
17:30 – 18:30
Live transmission from Cedars Sinai MC Los Angeles - USA
Percutaneous tricuspid / mitral valve repair

Facilitators: Horst Sievert – Habib Gamra


Introduction – session objectives.
Horst Sievert, Germany

18:30 – 19:00
Keynote Lecture
Management of functional mitral regurgitation: from medical therapy to percutaneous repair
Bernard Gersh, USA

19:00
Symposium Astra Zeneca


New evidence on Ticagrelor in acute coronary syndromes
Habib Gamra, Tunisia

Saturday September 14th, 2019

07:30-08
Breakfast E-Moderated Poster Session 4
Moderators: Nashwa Abderrahim – Slim Boudiche – Semi Milouchi – Faten Triki

08:30 – 10:00
Interventions for Stroke
Facilitators: Shakeel Qureshi – Horst Sievert


Introduction – session objectives.
Shakeel Qureshi, UK

08:30 – 10:00
Live transmission from Fattouma Bourguiba University Hospital Watchman LAA percutaneous Closure

Supported by Boston Scientific
Operators: Fethi Betbout & Ala Bourakkadi

Left Atrial Appendage Closure in 2019: State of the art
Horst Sievert, Germany

Percutaneous Carotid interventions: State of the art
Max Amor, France

10:00 – 10:30
COFFEE BREAK AND VISIT OF EXHIBITIONS

10-10:30
E-Moderated Poster Session 5
Moderators: Meriem Drissa - Mehdi Slim – Soufiene Kammoun – Nidhal Bouchahda
10:30 – 11:30

**Live transmission from Fattouma Bourguiba University Hospital**

Septal Ablation for Obstructive Cardiomyopathy

**Facilitators:** Habib Gamra – David Kettles

**Chairs:** Sami Mourali - Faouzi Addad - Maboury Diao - Helmi Kammoun – Rachid Boujenah - Amine Jemel - Leila Hached – Mourad Hentati – Afef Ben Halima

**Operators:** Fehmi Remadi - Hubert Seggewiss

Recent developments in septal ablation for obstructive cardiomyopathy

*Hubert Seggewiss (Germany)*

11:30 – 13:00

**Complications From Africa**

Under The Auspices of GTCI – AGIC – PASCAR Interventional Cardiology Task Force & CardioAlex

**Facilitators:** David Kettles – Mohamed Jeilan

**Chairs:** Michel Pansieri – Abdelhedi Alkadidi – Habib Boussadia – Jamel Langar – Adel Bouraghda – Kais Battikh – Mohamed Sobhy – Nazim Megherbi – Hedi Baccar

Algeria Presents: Left Main complexe lesion: The head before the hand

*Riad Snoussaoui, Algeria*

Sudan Presents: Broken coronaryangioplasty balloon: What to do? delivery system

*Nafisa Elsammani, Sudan*

Tunisia presents: Embolization of a dislodged stent

*Safouane Mansouri, Tunisia*

Kenya presents: Arterial complication during ICD Insertion

*Mohamed Jeilan, Kenya*

**Egypt presents:**

*Mohamed Sobhy, Egypt*

**Ethiopia presents:** Prosthetic valve thrombosis

*Abraha Hailu, Ethiopia*

10:30 – 11:30

**CVCT-MEMA @ PAFIC**

Quality and safety of originator-brand versus generic medications In the MEMA Region

**Supported by Abbott**

**Chairs:** Chokri Jeribi – Leila Abid – Ibrahim Ali Toure – Ines Fradi – Riadh Daghfous – Habib Gamra

What is CVCT-MEMA?

*Mohamed Sobhy, Egypt*

Originator-brand versus Generic medications in the MEMA region: Current status

*Chokri Jeribi, Tunisia*

Originator-brand versus Generic medications in subsaharan Africa: Current status

*Abdoul Kane, Senegal*

What are the requirements for a high quality generic

*Dorra Cherif, Tunisia*

Contribution of the CVCT initiative to develop bioequivalence studies in the MEMA region

*Faiez Zannad, Boston, USA*

**Discussion**

Take home message

*Chokri Jeribi, Tunisia*
Closing Keynote Lectures


The incredible history of cardiac catheterization
Thierry Corcos, France

How to Prevent Complications in the Cath Lab
David Kettles, South Africa

CLOSING REMARKS / MEETING HIGHLIGHTS

Mohamed Ben Farhat - Habib Gamra – Horst Sievert

In collaboration with:
<table>
<thead>
<tr>
<th>Poster No.</th>
<th>Session</th>
<th>Name</th>
<th>Surname</th>
<th>Entry ID</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>P 001</td>
<td></td>
<td>Sameh</td>
<td>Ben Farhat</td>
<td>486</td>
<td>A Case report of an Isolated Huge Coronary Artery Aneurysm in a Patient with Behcet’s Disease</td>
</tr>
<tr>
<td>P 002</td>
<td></td>
<td>Zakaria</td>
<td>QECHCHAR</td>
<td>471</td>
<td>A rare case of a unique single ostium coronary artery from the right coronary sinus with a common coronary artery and anomalous left circumflex course</td>
</tr>
<tr>
<td>P 003</td>
<td></td>
<td>NDAO</td>
<td>Serigne Cheikh Tidiane</td>
<td>390</td>
<td>ACUTE CORONARY SYNDROME COMPLICATED BY CARDIOGENIC SHOCK IN YOUNG ADULT</td>
</tr>
<tr>
<td>P 004</td>
<td></td>
<td>Nazim</td>
<td>MEGHERBI</td>
<td>293</td>
<td>Alternative Approach for Bifurcation Angioplasty</td>
</tr>
<tr>
<td>P 005</td>
<td></td>
<td>bengoufa</td>
<td>nour</td>
<td>353</td>
<td>An acute coronary syndrome reveals a Takayasu’s arteritis in a young female</td>
</tr>
<tr>
<td>P 006</td>
<td></td>
<td>KARA</td>
<td>Maamar</td>
<td>287</td>
<td>An LAD in all its states</td>
</tr>
<tr>
<td>P 007</td>
<td></td>
<td>Messaoudi</td>
<td>Yosra</td>
<td>277</td>
<td>Antiphospholipid syndrome complicated with a recurrent acute myocardial infarction after stent thrombosis: a case report</td>
</tr>
<tr>
<td>P 008</td>
<td></td>
<td>Messaoudi</td>
<td>Yosra</td>
<td>278</td>
<td>Behcet disease presented with myocardial infarction</td>
</tr>
<tr>
<td>P 009</td>
<td></td>
<td>Nazim</td>
<td>MEGHERBI</td>
<td>317</td>
<td>Branche To Branche Embolisation In Acute Coronary Syndrome</td>
</tr>
<tr>
<td>P 010</td>
<td></td>
<td>Nafisa</td>
<td>Elsammani</td>
<td>314</td>
<td>Broken percutaneous coronary angioplasty balloon delivery system in a coronary artery</td>
</tr>
<tr>
<td>P 011</td>
<td></td>
<td>Lehbib</td>
<td>Naji Ahmed Salem</td>
<td>382</td>
<td>Coronary spasm a possible threatening event</td>
</tr>
<tr>
<td>P 012</td>
<td></td>
<td>IBN EL HADJ</td>
<td>Zied</td>
<td>431</td>
<td>Crushed ostial LM stent with severe restenosis due to control angiogram</td>
</tr>
<tr>
<td>P 013</td>
<td></td>
<td>Jaouadi Abdellaziz</td>
<td>ABDELAZIZ</td>
<td>524</td>
<td>Double vessel subacute stent thrombosis: mountains of thrombosis</td>
</tr>
<tr>
<td>P 014</td>
<td></td>
<td>SALEM</td>
<td>MOHAMED AMINE</td>
<td>309</td>
<td>Iatrogenic coronary artery dissection</td>
</tr>
<tr>
<td>P 015</td>
<td></td>
<td>Nafisa Omar Elsammani</td>
<td>Elsammani</td>
<td>383</td>
<td>Other than atherosclerosis plaque</td>
</tr>
<tr>
<td>P 016</td>
<td></td>
<td>IBN EL HADJ</td>
<td>Zied</td>
<td>428</td>
<td>Primary coronary intervention in a patient With a Single Coronary Artery</td>
</tr>
<tr>
<td>P 017</td>
<td></td>
<td>Fadwa</td>
<td>Omri</td>
<td>338</td>
<td>ST elevation Myocardial Infarction due to Carbon Monoxide poisoning: a case report</td>
</tr>
<tr>
<td>P 018</td>
<td></td>
<td>Zakaria</td>
<td>QECHCHAR</td>
<td>460</td>
<td>ST segment elevation myocardial infarction and polycythemia vera: A Real management challenge</td>
</tr>
<tr>
<td>P 019</td>
<td></td>
<td>Yassmine</td>
<td>Kammoun</td>
<td>252</td>
<td>Thrombotic coronary ectasia and the interest of oral anticoagulation: Case report</td>
</tr>
<tr>
<td>P 020</td>
<td></td>
<td>Hadj mosbah</td>
<td>Mohamed Ali</td>
<td>514</td>
<td>Thymic carcinoma revealed by an acute coronary syndrome</td>
</tr>
<tr>
<td>P 021</td>
<td></td>
<td>Hatem</td>
<td>Lahdhili</td>
<td>372</td>
<td>Vein patch angioplasty combined with left internal thoracic artery outlay bypass to left anterior descending artery in patient with diffuse atherosclerosis lesions</td>
</tr>
<tr>
<td>P 022</td>
<td></td>
<td>Mohamed Aymen</td>
<td>Ben Abdelaem</td>
<td>438</td>
<td>Wellens Syndrome... not always a piece of cake. Challenging left main Bifurcation with LAD total occlusion in the setting of an NSTEMI.</td>
</tr>
<tr>
<td>P 023</td>
<td></td>
<td>Saeb</td>
<td>Ben Saad</td>
<td>513</td>
<td>A comparative study of bypass versus percutaneous intervention for left main coronary artery disease</td>
</tr>
<tr>
<td>P 024</td>
<td></td>
<td>Khalifa</td>
<td>roueida</td>
<td>263</td>
<td>A predictive factors of smoking cessation after an acute coronary syndrome : A prospective study and six months of follow-up</td>
</tr>
<tr>
<td>P 025</td>
<td></td>
<td>Benabdelljell</td>
<td>Ouday</td>
<td>429</td>
<td>Acute myocardial infarction aned No reflow : characteristics of patients and outcomes</td>
</tr>
<tr>
<td>P 026</td>
<td></td>
<td>meriem</td>
<td>drissa</td>
<td>451</td>
<td>angiographic profil during non ST elevation acute coronary syndrome : is there difference between men and women</td>
</tr>
<tr>
<td>P 027</td>
<td></td>
<td>TAHRI HOUTEY IDRISSI HASSANI</td>
<td>HIND</td>
<td>412</td>
<td>Association between factor V gene mutation and risk factors in patients with Myocardial Infarction (Morrocan experience)</td>
</tr>
<tr>
<td>P 028</td>
<td></td>
<td>Ayoub</td>
<td>Belfekih</td>
<td>266</td>
<td>Biological findings in Cardiogenic SHOCK complicating a STEMI: MIRAMI registry</td>
</tr>
<tr>
<td>P 029</td>
<td>Amdouni Nesrine 488</td>
<td>Biological predicting factors of in-hospital mortality following acute myocardial infarction treated with primary percutaneous coronary intervention.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 030</td>
<td>FATIMA EZZAHRAA TALHI 474</td>
<td>C-reactive Protein is a Predictor of Mortality in Acute Coronary Syndromes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 031</td>
<td>Oumaima Naour 527</td>
<td>Chest pain in emergency department: Assessment of 209 patients.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 032</td>
<td>Chebbi Manwa 493</td>
<td>Choosing the correct stent diameter for left main, QCA or IVUS?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 033</td>
<td>IBN EL HADJ Zied 421</td>
<td>Chronic kidney disease in patients with acute coronary syndromes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 034</td>
<td>Ajoub Belfekih 268</td>
<td>Clinical findings in cardiogenic shock complicating a STEMI: MIRAMI registry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 035</td>
<td>Charfeddine Salma 384</td>
<td>Clinical Outcomes of Isolated Ostial Left Anterior Descending Artery Disease Treatment: Ostial Stenting versus Left Main Cross-Over Stenting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 036</td>
<td>Ben Saad Khawla 422</td>
<td>Clinical presentation and prognosis of acute coronary syndrome in chronic renal insufficiency patients</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 037</td>
<td>Amdouni Nesrine 482</td>
<td>Clinical profile and angiographic outcomes of acute myocardial infarction following primary angioplasty in women: data from a Tunisian cohort.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 038</td>
<td>Lehbib Naji Ahmed Salem 294</td>
<td>Coronary CTscan in complement to coronary angiography: about 37 cases</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 039</td>
<td>FATIMA EZZAHRAA Taihi 478</td>
<td>Determinants and Prognostic Impact of Heart Failure Complicating Acute Coronary Syndromes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 040</td>
<td>BOUSSAADA Mohamed Mehdi 509</td>
<td>Drug eluting stents versus bare metal stents for large coronary arteries: Does size really matter?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 041</td>
<td>Mzoughi Khadija 257</td>
<td>Dual antiplatelet therapy following acute coronary syndrome: where are we?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 042</td>
<td>HENTATI RIM 337</td>
<td>Early mortality of women undergoing primary angioplasty for acute myocardial infarction.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poster No.</td>
<td>Session</td>
<td>Name</td>
<td>Surname</td>
<td>Entry ID</td>
<td>Title</td>
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</tr>
<tr>
<td>P 043</td>
<td></td>
<td>TAHRI</td>
<td>JOUTEY</td>
<td>506</td>
<td>Effect of Rashkind procedure on oxygen saturation level and short term outcomes in neonates with transposition of the great arteries</td>
</tr>
<tr>
<td>P 044</td>
<td></td>
<td>Bouchahda</td>
<td>Nidhal</td>
<td>297</td>
<td>Efficacy of Thrombolytic therapy in STEMI patients with stent thrombosis</td>
</tr>
<tr>
<td>P 045</td>
<td></td>
<td>Ayoub</td>
<td>Belfekih</td>
<td>359</td>
<td>Epidemiologic profile of patients admitted for cardiogenic shock complicating a STEMI: MIRAMI registry</td>
</tr>
<tr>
<td>P 046</td>
<td></td>
<td>Benabdeljelil</td>
<td>Oudad</td>
<td>358</td>
<td>FIBRINOLYSIS OR PRIMARY PCI : A TUNISIAN COHORT</td>
</tr>
<tr>
<td>P 047</td>
<td></td>
<td>Amdouni</td>
<td>Nesrine</td>
<td>329</td>
<td>Frequency, determinants, and clinical implications of residual intracoronary thrombus following primary angioplasty for acute myocardial infarction</td>
</tr>
<tr>
<td>P 048</td>
<td></td>
<td>Abdallah</td>
<td>Manwa</td>
<td>461</td>
<td>Hypercholesterolemia in children : premature cardiovascular risk Left Main Coronary Angioplasty in a 10-Year-Old Boy With Familial Hypercholesterolemia</td>
</tr>
<tr>
<td>P 050</td>
<td></td>
<td>Ayoub</td>
<td>Belfekih</td>
<td>269</td>
<td>Impact of diabetes and hyper-glycaemia on in-hospital prognosis in cardiogenic shock complicating a STEMI</td>
</tr>
<tr>
<td>P 051</td>
<td></td>
<td>Mzoughi</td>
<td>Khadija</td>
<td>258</td>
<td>Impact of early discontinuation of dual antplatelet therapy on the occurrence of major cardiovascular events following acute coronary syndrome</td>
</tr>
<tr>
<td>P 052</td>
<td></td>
<td>Zakaria</td>
<td>QECHCHAR</td>
<td>483</td>
<td>Impact of serum lipid levels at admission in acute coronary syndrome</td>
</tr>
<tr>
<td>P 053</td>
<td></td>
<td>bouchnag</td>
<td>skander</td>
<td>398</td>
<td>In-hospital mortality in cardiogenic SHOCK complicating a STEMI: role of biological factors ( MIRAMI Registry)</td>
</tr>
<tr>
<td>P 054</td>
<td></td>
<td>Benabdeljelil</td>
<td>Oudad</td>
<td>357</td>
<td>In-hospital outcomes in female patients after STEMI and primary PCI : insight from a Tunisian cohort</td>
</tr>
<tr>
<td>P 055</td>
<td></td>
<td>IBN EL HADJ</td>
<td>Zied</td>
<td>420</td>
<td>Influence of the opening of a new catheterization laboratory on the management of acute coronary syndromes</td>
</tr>
<tr>
<td>P 056</td>
<td></td>
<td>El Mourid</td>
<td>Monia</td>
<td>470</td>
<td>Is the presence of an initial hypo albuminemia at the admission for an acute coronary syndrome of bad prognostic?</td>
</tr>
<tr>
<td>P 057</td>
<td></td>
<td>KHALIL</td>
<td>OUAGHLANI</td>
<td>405</td>
<td>Left Circumflex Coronary artery as the culprit vessel in acute coronary syndromes with and without persistent ST segment elevation</td>
</tr>
<tr>
<td>P 058</td>
<td></td>
<td>Mahmoud</td>
<td>Cheikh Bouhlilel</td>
<td>378</td>
<td>Long term results and prognostic factors associated with percutaneous coronary interventions for isolated proximal stenosis of the left anterior descending artery</td>
</tr>
<tr>
<td>P 059</td>
<td></td>
<td>Fadwa</td>
<td>Omri</td>
<td>295</td>
<td>Mortality in acute myocardial infarction: evolution and predictors depending on its management</td>
</tr>
<tr>
<td>P 060</td>
<td></td>
<td>TAHRI</td>
<td>JOUTEY</td>
<td>501</td>
<td>Myocardial infarction in young versus older adults: clinical characteristics and angiographic features (Morrocan experience)</td>
</tr>
<tr>
<td>P 061</td>
<td></td>
<td>SELIM</td>
<td>BOUDICHE</td>
<td>365</td>
<td>MYOCARDIAL INFARCTION WITH ST ELEVATION: EVALUATION OF THE QUALITY OF MANAGEMENT ACCORDING TO THE RECOMMENDATIONS OF THE EUROPEAN SOCIETY OF CARDIOLOGY</td>
</tr>
<tr>
<td>P 062</td>
<td></td>
<td>BOUDICHE</td>
<td>SELIM</td>
<td>364</td>
<td>PERCUTANEOUS CORONARY INTERVENTION WITH ROTATIONAL AHERECTOMY: IMMEDIATE AND LONG-TERM RESULTS</td>
</tr>
<tr>
<td>P 063</td>
<td></td>
<td>Ayoub</td>
<td>Belfekih</td>
<td>270</td>
<td>Predicting factor of early invasive strategy failure in patients with STEMI complicated by cardiogenic shock</td>
</tr>
<tr>
<td>P 064</td>
<td></td>
<td>Saida</td>
<td>Boucefffa</td>
<td>308</td>
<td>Predictive factors of intrahospital mortality in patients with right ventricular myocardial infarction</td>
</tr>
<tr>
<td>P 065</td>
<td></td>
<td>Hedhli</td>
<td>Hana</td>
<td>491</td>
<td>Predictive factors of myocardial infarction at one month in patients admitted to the emergency department with Non-ST-segment elevation acute coronary syndrome</td>
</tr>
<tr>
<td>P 066</td>
<td></td>
<td>Isabelle</td>
<td>KOUAME</td>
<td>371</td>
<td>PREVALENCE AND PREDICTIVE FACTORS OF MULTI-VEssel CORONARY DISEASE : A SINGLE-CENTRE CROSS-SECTIONAL STUDY IN CÔTE D’IVOIRE</td>
</tr>
<tr>
<td>P 067</td>
<td>El Mourid Monia</td>
<td>466</td>
<td>Prevalence of confusion in cardiogenic shock</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 068</td>
<td>Amdouni Nesrine</td>
<td>499</td>
<td>Primary coronary angioplasty in acute myocardial infarction: Impact of diabetes mellitus in angiographic results</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 069</td>
<td>Isabelle Kouame</td>
<td>370</td>
<td>PRIMARY PCI IN MANAGEMENT OF STEMI IN CÔTE D’IVOIRE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 070</td>
<td>Majed Hassine</td>
<td>450</td>
<td>Relationship between circulating activin A levels and severity of coronary artery disease in patients with type 2 diabetes mellitus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 071</td>
<td>Mejdi Ben Messaoud</td>
<td>441</td>
<td>Relationship between high sensitivity C-Reactive Protein and increased levels of heart rate in acute coronary syndrome patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 072</td>
<td>Majed Hassine</td>
<td>442</td>
<td>Relationship of Interleukin-6 and Hs-CRP with TIMI risk scoring system in acute coronary syndrome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 073</td>
<td>Mejdi Ben Messaoud</td>
<td>453</td>
<td>Relationship of plasma homocysteine levels with the severity of coronary artery disease in type 2 diabetic patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 074</td>
<td>Saida Bouceffa</td>
<td>307</td>
<td>Reperfusion strategy in renal dysfunction patients presenting with STEMI</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 075</td>
<td>Ebasone Peter Vanes Kewir</td>
<td>361</td>
<td>Risk factor profile in patients who underwent coronary angiography at the Shisong Cardiac Centre, Cameroon</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 076</td>
<td>FATHIA MGHAETH</td>
<td>430</td>
<td>Risk factors of contrast-induced nephropathy after non urgent coronaryography</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 077</td>
<td>Saida Bouceffa</td>
<td>310</td>
<td>SELECTION AND TIMING FOR INVASIVE THERAPY IN NON ST SEGMENT ELEVATION ACUTE CORONARY SYNDROME</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 078</td>
<td>haj mosbeh mohamed ali</td>
<td>300</td>
<td>Single coronary ostium: A case report</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 079</td>
<td>Khalifa Rouaida</td>
<td>528</td>
<td>Spontaneous dissection of coronaries: About four patients</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 080</td>
<td>Mzoughi Khadija</td>
<td>256</td>
<td>ST2 and intra-hospital mortality in myocardial infarction</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 081</td>
<td>bouchnag skander</td>
<td>407</td>
<td>The impact of comorbidities and socio-economic environment in the management of elderly patients presenting with acute coronary syndrome</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 082</td>
<td>Ayoub Belfekih</td>
<td>272</td>
<td>The smoker paradox, does it exist in STEMI complicated by cardiogenic shock?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 083</td>
<td>Ayoub Belfekih</td>
<td>271</td>
<td>Thrombolysis in cardiogenic shock complicating a STEMI: MIRAMI registry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 084</td>
<td>BOUDICHE SELIM</td>
<td>363</td>
<td>THROMBUS ASPIRATION DURING PRIMARY PERCUTANEOUS CORONARY INTERVENTION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 085</td>
<td>Bentati Mouna</td>
<td>521</td>
<td>THROMBUS ASPIRATION DURING PRIMARY PERCUTANEOUS CORONARY INTERVENTION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 086</td>
<td>Cheref Djamel</td>
<td>321</td>
<td>Unexpected longitudinal stent compression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poster no.</td>
<td>Session</td>
<td>Name</td>
<td>Surname</td>
<td>Entry ID</td>
<td>Title</td>
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</tr>
<tr>
<td>P 087</td>
<td></td>
<td>Hopital Abderrahmen Mami</td>
<td>Zied</td>
<td>413</td>
<td>Unprotected left main coronary angioplasty, results of a new Cath-lab.</td>
</tr>
<tr>
<td>P 088</td>
<td></td>
<td>Bekele Alemayahu</td>
<td>Shashu</td>
<td>248</td>
<td>Utilization of ticagrelor as a sole anti-platelet agent in a patient with high risk of bleeding and an anomalous origin of left anterior descending coronary artery from right coronary artery</td>
</tr>
<tr>
<td>P 089</td>
<td></td>
<td>El Mourid Monia</td>
<td></td>
<td>512</td>
<td>VARIABILITY OF HEART RATE AS A PROGNOSIS FACTOR IN POST-INFARCTION</td>
</tr>
<tr>
<td>P 090</td>
<td></td>
<td>FATHIA MGHAIETH</td>
<td></td>
<td>459</td>
<td>Correlation between Conventional Doppler Tei Index and Tissue Doppler Tei Index in acute coronary sonecord</td>
</tr>
<tr>
<td>P 091</td>
<td></td>
<td>Hitham Mansour</td>
<td></td>
<td>349</td>
<td>Chest pain in Emergency room</td>
</tr>
<tr>
<td>P 092</td>
<td></td>
<td>dardouri safa</td>
<td></td>
<td>330</td>
<td>Acute Coronary Syndromes in Young Drug-Addicted Patients: Pathophysiology, Diagnosis and Treatment</td>
</tr>
<tr>
<td>P 093</td>
<td></td>
<td>echaieb widad</td>
<td></td>
<td>351</td>
<td>PROGNOSIS IN THE HOSPITAL PHASE OF MYOCARDIAL INFARCTION COMPLICATED BY AN ATRIOVENTRICULAR BLOCK; RETROSPECTIVE STUDY OF A SERIE OF 400 CASES</td>
</tr>
<tr>
<td>P 094</td>
<td></td>
<td>Amamou Imen</td>
<td></td>
<td>477</td>
<td>Coronary artery fistula in a Young Patient with Marfan Syndrome</td>
</tr>
<tr>
<td>P 095</td>
<td></td>
<td>SOUDANI SABRINE</td>
<td></td>
<td>381</td>
<td>Development of superior vena cava syndrome (SVCS) with a giant aneurysm of the upper vena cava after Bidirectional Glenn procedure in patient with univentricular heart and PH</td>
</tr>
<tr>
<td>P 096</td>
<td></td>
<td>KHALIL OUAGHLANI</td>
<td></td>
<td>397</td>
<td>Late Bidirectional Glenn Anastomosis failure for single ventricle despite “protected” pulmonary arteries</td>
</tr>
<tr>
<td>P 098</td>
<td></td>
<td>Houda Ghardallou</td>
<td></td>
<td>494</td>
<td>Percutaneous treatment of a rare case of aortic coarctation mimicking an interruption of the aortic arch</td>
</tr>
<tr>
<td>P 099</td>
<td></td>
<td>CHENIK SARRA</td>
<td></td>
<td>404</td>
<td>PERIMEMBRANOUS SEPTAL CARDIAC DEFECT ASSOCIATED TO A NON COMPACTED LEFT VENTRICLE: a case report</td>
</tr>
<tr>
<td>P 100</td>
<td></td>
<td>Sameh Ben Farhat</td>
<td></td>
<td>374</td>
<td>A retrospective study of 1000 cases of congenital ventricular septal defects in Tunisia : Experience of a tertiary center.</td>
</tr>
<tr>
<td>P 101</td>
<td></td>
<td>Amdouni Nesrine</td>
<td></td>
<td>328</td>
<td>Acute myocardial infarction treated with primary percutaneous coronary intervention in the elderly</td>
</tr>
<tr>
<td>P 102</td>
<td></td>
<td>TAHRI JOUTEY IDRISSI HASSANI</td>
<td>HIND</td>
<td>515</td>
<td>An analysis of Diagnostic cardiac catheterization in congenital heart disease (A single center experience)</td>
</tr>
<tr>
<td>P 103</td>
<td></td>
<td>Khalifa roueida</td>
<td></td>
<td>303</td>
<td>Cardiac manifestations during Costello syndrom: About two cases</td>
</tr>
<tr>
<td>P 104</td>
<td></td>
<td>Thabet Houssem</td>
<td></td>
<td>368</td>
<td>Common arterial trunk : epidemioclinical features and care in a Tunisian center</td>
</tr>
<tr>
<td>P 105</td>
<td></td>
<td>dardouri safa</td>
<td></td>
<td>423</td>
<td>Ebstein’s Anomaly in adulthood : Diagnostic and therapeutic particularities</td>
</tr>
<tr>
<td>P 106</td>
<td></td>
<td>Khalifa roueida</td>
<td></td>
<td>301</td>
<td>Ebstein’s disease causes repetitive abortion: A case report</td>
</tr>
<tr>
<td>P 107</td>
<td></td>
<td>Abdallalah Manwa</td>
<td></td>
<td>457</td>
<td>Ectopic connection of the left coronary artery with the contralateral sinus</td>
</tr>
<tr>
<td>P 108</td>
<td></td>
<td>HADJ MOSBEH Mohamed Ali</td>
<td></td>
<td>419</td>
<td>Endovascular treatment of aortic of coarctation</td>
</tr>
<tr>
<td>P 109</td>
<td></td>
<td>CHENIK SARRA</td>
<td></td>
<td>400</td>
<td>Epidemiological and clinical assessment of patent ductus arteriosus</td>
</tr>
<tr>
<td>P 110</td>
<td></td>
<td>hela sarray</td>
<td></td>
<td>385</td>
<td>Fetal aortic stenosis: Perinatal diagnosis and valvuloplasty outcomes: About three cases</td>
</tr>
<tr>
<td>P 111</td>
<td></td>
<td>Sameh Ben Farhat</td>
<td></td>
<td>375</td>
<td>Immediate and short-term results of percutaneous perimembranous and trabecular ventricular septal defect closure with Amplatzer Duct Occluder II .</td>
</tr>
<tr>
<td>P 112</td>
<td></td>
<td>BOUDICHE SELIM</td>
<td></td>
<td>362</td>
<td>OSTIUM SECUNDUM ATRIAL SEPTAL DEFECTS; RESULTS OF CLOSURE TECHNIQUES IN ADULTS</td>
</tr>
<tr>
<td>P 113</td>
<td></td>
<td>SELIM BOUDICHE</td>
<td></td>
<td>366</td>
<td>Percutaneous dilation of critical pulmonary stenosis in neonates: results and predictive factors of reintervention.</td>
</tr>
<tr>
<td>P 114</td>
<td></td>
<td>sobhi mleyhi</td>
<td></td>
<td>536</td>
<td>Redux Pulmonary Valve Replacement for Conotruncal Diseases</td>
</tr>
<tr>
<td>P 115</td>
<td></td>
<td>Hadj Mosbeh Mohamed Ali</td>
<td></td>
<td>274</td>
<td>Transcatheter closure of patent arterial duct: immediate and short-term results</td>
</tr>
<tr>
<td>P 116</td>
<td>P 117</td>
<td>P 118</td>
<td>P 119</td>
<td>P 120</td>
<td>P 121</td>
</tr>
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<tr>
<td>P 116</td>
<td>P 117</td>
<td>P 118</td>
<td>P 119</td>
<td>P 120</td>
<td>P 121</td>
</tr>
<tr>
<td>116</td>
<td>117</td>
<td>118</td>
<td>119</td>
<td>120</td>
<td>121</td>
</tr>
<tr>
<td>Poster no.</td>
<td>Session</td>
<td>Name</td>
<td>Surname</td>
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</tr>
<tr>
<td>P 130</td>
<td></td>
<td>AFRAH</td>
<td>HAROON</td>
<td>292</td>
<td>The Fisherman’s Daughter</td>
</tr>
<tr>
<td>P 131</td>
<td></td>
<td>slimen</td>
<td>walid</td>
<td>432</td>
<td>The prognostic value of pulmonary embolism severity index in acute pulmonary embolism</td>
</tr>
<tr>
<td>P 132</td>
<td></td>
<td>haj mosbeh</td>
<td>mohamed</td>
<td>315</td>
<td>Acute pericarditis revealing an invasive thymoma: A case report</td>
</tr>
<tr>
<td>P 133</td>
<td></td>
<td>El Mourid</td>
<td>Monia</td>
<td>490</td>
<td>Association of Diabetes and arterial Hypertension in elderly in Moroccan population</td>
</tr>
<tr>
<td>P 134</td>
<td></td>
<td>khalifa</td>
<td>roueida</td>
<td>299</td>
<td>Cardiac Thrombosis reveals Behcet’s Disease: A case report</td>
</tr>
<tr>
<td>P 135</td>
<td></td>
<td>FATIMA</td>
<td>EZZAHRAA</td>
<td>467</td>
<td>Characteristics of association pulmonary embolism and respiratory affection</td>
</tr>
<tr>
<td>P 136</td>
<td></td>
<td>Lassoued</td>
<td>Chiraz</td>
<td>402</td>
<td>Clinical profile and means of protection of patients with acute renal failure following cardiac surgery: About a Tunisian cohort</td>
</tr>
<tr>
<td>P 137</td>
<td></td>
<td>El Mourid</td>
<td>Monia</td>
<td>475</td>
<td>Correlation between Global Longitudinal Strain and diastolic Left ventricular function and in hypertensive patients</td>
</tr>
<tr>
<td>P 138</td>
<td></td>
<td>TOURE ALI</td>
<td>IBRAHIM</td>
<td>355</td>
<td>Epidemiology of heart failure in Sub Saharian Africa case of Niger republic</td>
</tr>
<tr>
<td>P 139</td>
<td></td>
<td>IBN EL HADJ</td>
<td>Zied</td>
<td>418</td>
<td>Evaluation of the use of ambulatory blood pressure monitoring in the public and private practice</td>
</tr>
<tr>
<td>P 140</td>
<td></td>
<td>Abdallah</td>
<td>Marwa</td>
<td>455</td>
<td>Extracorporeal membrane oxygenation in the reversal of cardiopulmonary failure induced by fatal scorpion envenomation: a case report</td>
</tr>
<tr>
<td>P 141</td>
<td></td>
<td>TOURE ALI</td>
<td>IBRAHIM</td>
<td>354</td>
<td>HEART AND OBESITY</td>
</tr>
<tr>
<td>P 142</td>
<td></td>
<td>Slimani</td>
<td>mohammed</td>
<td>282</td>
<td>Incidence and predictors of contrast-induced nephropathy in patients admitted for cardiac catheterization and angiography, in a cohort of 746 patients</td>
</tr>
<tr>
<td>P 143</td>
<td></td>
<td>FATIMA</td>
<td>EZZAHRAA</td>
<td>487</td>
<td>Incidence and prognostic of Hypoaalbuminemia in patients with Acute Pulmonary Embolism.</td>
</tr>
<tr>
<td>P 144</td>
<td></td>
<td>Saeb</td>
<td>Ben Saad</td>
<td>379</td>
<td>Indications and results of implantable cardioverter defibrillator for sudden cardiac death prevention: The experience of a Tunisian center</td>
</tr>
<tr>
<td>P 145</td>
<td></td>
<td>Benabdelljell</td>
<td>ouday</td>
<td>324</td>
<td>Infective endocarditis on pacemaker : a retrospective Tunisian cohort</td>
</tr>
<tr>
<td>P 146</td>
<td></td>
<td>El Mourid</td>
<td>Monia</td>
<td>484</td>
<td>Is obesity a prognosis risk factor in pulmonary embolism: A Moroccan experience</td>
</tr>
<tr>
<td>P 147</td>
<td></td>
<td>Majed</td>
<td>Hassine</td>
<td>502</td>
<td>Lipoprotein (a) in coronary artery disease patients with type 2 diabetes mellitus</td>
</tr>
<tr>
<td>P 148</td>
<td></td>
<td>Lehbib</td>
<td>Naji Ahmed Salem</td>
<td>285</td>
<td>Obstructive sleep apnea syndrome during cardiovascular pathologies: Evolution and results after mechanical treatment</td>
</tr>
<tr>
<td>P 149</td>
<td></td>
<td>Lassoued</td>
<td>Chiraz</td>
<td>409</td>
<td>Particularities of the perioperative management of hemodialysis patients undergoing cardiac surgery: experience of a Tunisian team</td>
</tr>
<tr>
<td>P 150</td>
<td></td>
<td>El Mourid</td>
<td>Monia</td>
<td>468</td>
<td>Persistent pre-eclampsia : survey of Moroccan women</td>
</tr>
<tr>
<td>P 151</td>
<td></td>
<td>khalifa</td>
<td>roueida</td>
<td>260</td>
<td>Predominant left ventricular involvement in arrhythmogenic right ventricular dysplasia</td>
</tr>
<tr>
<td>P 152</td>
<td></td>
<td>El Mourid</td>
<td>Monia</td>
<td>480</td>
<td>Prevalence and related factors of metabolic syndrome in hypertensive patients in a moroccan population</td>
</tr>
<tr>
<td>P 153</td>
<td></td>
<td>miled</td>
<td>manel</td>
<td>273</td>
<td>PROGNOSTIC VALUE OF GLOBAL LONGITUDINAL STRAIN IN CHRONIC HEART FAILURE</td>
</tr>
<tr>
<td>P 154</td>
<td></td>
<td>HENTATI</td>
<td>RIM</td>
<td>342</td>
<td>Real time-2D and 3D transesophageal echocardiography : assessment of left atrial appendage anatomy and function.</td>
</tr>
<tr>
<td>P 155</td>
<td></td>
<td>Lehbib</td>
<td>Naji Ahmed Salem</td>
<td>283</td>
<td>Reliability of the latest recommendations for estimating left ventricular filling pressures: Comparative study with left cardiac catheterization.</td>
</tr>
<tr>
<td>P 156</td>
<td></td>
<td>Marouane</td>
<td>Mahjoub</td>
<td>481</td>
<td>Right bundle branch block and SIQIII-type patterns for risk stratification in acute pulmonary embolism</td>
</tr>
<tr>
<td>P 157</td>
<td></td>
<td>KHALIFA</td>
<td>ROUEIDA</td>
<td>259</td>
<td>Securesens could-it be a supraventricular tachycardia discrimination algorithm ?</td>
</tr>
<tr>
<td>P 158</td>
<td></td>
<td>Marouane</td>
<td>Mahjoub</td>
<td>472</td>
<td>Systemic thrombolysis for pulmonary embolism</td>
</tr>
<tr>
<td>P 159</td>
<td></td>
<td>Khalifa</td>
<td>roueida</td>
<td>316</td>
<td>Tamponade revealing Still’s disease in children: A case report</td>
</tr>
<tr>
<td>ID</td>
<td>Speaker</td>
<td>Title</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>-----</td>
<td>---------------------------------</td>
<td>---------------------------------------------------------------------------------------------------------------------</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 160</td>
<td>hela sarray</td>
<td>The place of cardiac catheterization in constrictive pericarditis in pediatric patients: About three challenging cases</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 161</td>
<td>FATIMA EZZAHRAA TALHI</td>
<td>The prognostic value of pulmonary embolism severity index in acute pulmonary embolism</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 162</td>
<td>FATIMA EZZAHRAA TALHI</td>
<td>The Prognostic Value of Renal Function in Acute Pulmonary Embolism in the cardiology department of Ibn Rochd university hospital Casablanca morocco</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 163</td>
<td>drissa meriem</td>
<td>Therapeutic Profile of chronic heart failure (a review of tunisian cohort)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 164</td>
<td>MINKO GAELLE MARCELLINE</td>
<td>Use of the “Minnesota Living With Heart Failure” quality of life in the cardiology department of university hospital center of Casablanca: A prospective series.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 165</td>
<td>fennira sana</td>
<td>Utility of echocardiography in the diagnosis of arrhythmogenic right ventricle dysplasia</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 166</td>
<td>bengoufa nour</td>
<td>Sudden cardiac death in a young woman with Takayasu’s arteritis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 167</td>
<td>Abir Bouslimi</td>
<td>Right Ventricle Systolic Function in children with sickle cell disease</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 168</td>
<td>echaieb widad</td>
<td>CARDIOMYOPATHY DILATED DURING HEMOCHROMATOSIS</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 169</td>
<td>FATHIA MGHAIETH</td>
<td>Coronary artery disease in young adult with Duchenne muscular dystrophy: Case report</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 170</td>
<td>FATIMA EZZAHRAA TALHI</td>
<td>Hypertrophic cardiomyopathy with Aneurysms of the Ascending Aorta: A novel association</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 171</td>
<td>Antit Saoussen</td>
<td>Myocarditis and recurrent stroke as the first presentations of coeliac disease</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 172</td>
<td>echaieb widad</td>
<td>Severe myocarditis in systemic lupus erythematosus</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 173</td>
<td>Antit Saoussen</td>
<td>Cardiac MRI: the reference Imaging in the diagnosis of acute myocarditis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P 174</td>
<td>echaieb widad</td>
<td>CONTRIBUTION OF ECHOCARDIOGRAPHY IN THE DIAGNOSIS OF CONSTRUCTIVE CHRONIC PERICARDITIS.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poster no.</td>
<td>Session</td>
<td>Name</td>
<td>Surname</td>
<td>Entry ID</td>
<td>Title</td>
</tr>
<tr>
<td>------------</td>
<td>---------</td>
<td>----------</td>
<td>-----------</td>
<td>----------</td>
<td>------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>P 175</td>
<td></td>
<td>Ben Elhadj</td>
<td>Zied</td>
<td>410</td>
<td>First hospitalization for acute heart failure: epidemiology, etiology and one year outcomes. The AFHAHF study.</td>
</tr>
<tr>
<td>P 176</td>
<td></td>
<td>Haj mosbeh</td>
<td>Mohamed Ali</td>
<td>302</td>
<td>Hypertrophic cardiomyopathy with apical anevrysm and diastolic obstruction: About 2 cases</td>
</tr>
<tr>
<td>P 177</td>
<td></td>
<td>IBN EL HADJ</td>
<td>Zied</td>
<td>416</td>
<td>Left ventricular reverse remodeling and super responders after Cardiac Resynchronization Therapy.</td>
</tr>
<tr>
<td>P 178</td>
<td></td>
<td>Abir</td>
<td>Bouslimi</td>
<td>425</td>
<td>LONG TERM OUTCOME OF RADIOFREQUENCY ABLATION OF ATRIOVENTRICAL NODAL REENTRANT TACHYCARDIA</td>
</tr>
<tr>
<td>P 179</td>
<td></td>
<td>Antit</td>
<td>Saoussen</td>
<td>288</td>
<td>Medical management of chronic heart failure: a retrospective study</td>
</tr>
<tr>
<td>P 180</td>
<td></td>
<td>meriem</td>
<td>drissa</td>
<td>446</td>
<td>Outcome of chronic heart failure in a tunisan cohort</td>
</tr>
<tr>
<td>P 181</td>
<td></td>
<td>dardouri</td>
<td>safi</td>
<td>436</td>
<td>Pseudo pacemaker syndrome due to first-degree atrioventricular block : A case report</td>
</tr>
<tr>
<td>P 182</td>
<td></td>
<td>Antit</td>
<td>Saoussen</td>
<td>290</td>
<td>CHA2DS2-VASc versus CHADS2 in predicting thromboembolic risk: about 120 cases of atrial fibrillation</td>
</tr>
<tr>
<td>P 183</td>
<td></td>
<td>khalifa</td>
<td>roueida</td>
<td>261</td>
<td>Dual atrioventricular node conduction during sinus rhythm</td>
</tr>
<tr>
<td>P 184</td>
<td></td>
<td>dardouri</td>
<td>safi</td>
<td>435</td>
<td>Long-term efficacy of percutaneous mitral commissurotomy for rheumatic mitral stenosis</td>
</tr>
<tr>
<td>P 186</td>
<td></td>
<td>Saida</td>
<td>Bouceffa</td>
<td>305</td>
<td>Balloon Mitral Valvotomy for patients with mitral stenosis in atrial fibrillation: Immediate and long term prognosis</td>
</tr>
<tr>
<td>P 187</td>
<td></td>
<td>FATIMA EZZAHRAA</td>
<td>TALHI</td>
<td>469</td>
<td>Clinical characteristics and echocardiographic evaluation of rheumatic mitral stenosis in men : a prospective study</td>
</tr>
<tr>
<td>P 188</td>
<td></td>
<td>El Mourid</td>
<td>Monia</td>
<td>465</td>
<td>Correlation between Peak aortic jet velocity and severity of aortic stenosis. Moroccan experience</td>
</tr>
<tr>
<td>P 189</td>
<td></td>
<td>houda</td>
<td>belkhiria</td>
<td>392</td>
<td>Early stenosis of percutaneous Melody valve</td>
</tr>
<tr>
<td>P 190</td>
<td></td>
<td>meriem</td>
<td>drissa</td>
<td>445</td>
<td>Early surgery in infective endocarditis :indications and résultats</td>
</tr>
<tr>
<td>P 191</td>
<td></td>
<td>FATHIA</td>
<td>MGHAIETH</td>
<td>444</td>
<td>Evaluation of Aortic stenosis severity : Echocardiography in comparison with Cardiac catheterization</td>
</tr>
<tr>
<td>P 192</td>
<td></td>
<td>Zakaria</td>
<td>QECHCHAR</td>
<td>473</td>
<td>How renal dysfunction in elderly impacts mitral regurgitation</td>
</tr>
<tr>
<td>P 193</td>
<td></td>
<td>Abir</td>
<td>Bouslimi</td>
<td>426</td>
<td>How to proceed in transcatheter aortic valve implantation (TAVI) when the trans-femoral approach is not possible?</td>
</tr>
<tr>
<td>P 194</td>
<td></td>
<td>Zakaria</td>
<td>QECHCHAR</td>
<td>479</td>
<td>Importance of cognitive impairment in elderly with valvular heart disease</td>
</tr>
<tr>
<td>P 195</td>
<td></td>
<td>Saida</td>
<td>Bouceffa</td>
<td>306</td>
<td>Infective endocarditis complicated by heart failure</td>
</tr>
<tr>
<td>P 196</td>
<td></td>
<td>MINKO</td>
<td>FLORENCE MARCELLINE</td>
<td>251</td>
<td>Infective endocarditis complications: which incidence and Clinical impact of embolic Events?</td>
</tr>
<tr>
<td>P 197</td>
<td></td>
<td>ngolo-letomo</td>
<td>kivié mou- moué</td>
<td>254</td>
<td>left heart anevrysm at the university hospital center of brazzaville: about a case</td>
</tr>
<tr>
<td>P 198</td>
<td></td>
<td>AFRAH YOUSIF ADAM HAROON</td>
<td>HAROON</td>
<td>246</td>
<td>LONG TERM OUT COME OF MITRACLIP</td>
</tr>
<tr>
<td>P 199</td>
<td></td>
<td>Ahmed</td>
<td>Jamel</td>
<td>485</td>
<td>Mitral stenosis in atrial fibrillation: immediate and long term prognosis of balloon mitral valvotomy</td>
</tr>
<tr>
<td>P 200</td>
<td></td>
<td>FATIMA EZZAHRAA</td>
<td>Talhi</td>
<td>492</td>
<td>Mitral valve stenosis : Epidemiology characteristics and echocardiographic evaluation in elderly patients</td>
</tr>
<tr>
<td>P 201</td>
<td></td>
<td>Thabet</td>
<td>Houssem</td>
<td>367</td>
<td>Multicenter descriptive study of cases of infectious endocarditis in Tunisia over 12 years</td>
</tr>
<tr>
<td>P 202</td>
<td></td>
<td>HENTATI</td>
<td>RIM</td>
<td>345</td>
<td>Percutaneous mitral commissurotomy in pregnant women with severe mitral stenosis: About 14 cases.</td>
</tr>
<tr>
<td>P 203</td>
<td></td>
<td>Chenik</td>
<td>sarra</td>
<td>408</td>
<td>Thirty-Day Outcomes in Patients Undergoing Transfemoral Aortic Valve Replacement.</td>
</tr>
<tr>
<td>P 204</td>
<td>Moderated POSTER Session 5: Saturday September 14 @ 10-10:30</td>
<td>slimen</td>
<td>valid</td>
<td>508</td>
<td>Wilkins score for severe mitral stenosis: what is beyond the procedural considerations?</td>
</tr>
<tr>
<td>P 205</td>
<td>HENTATI</td>
<td>RIM</td>
<td>348</td>
<td>The diagnosis and treatment of prosthetic mitral valve thrombosis</td>
<td></td>
</tr>
<tr>
<td>P 206</td>
<td>sobhi</td>
<td>mleyhi</td>
<td>535</td>
<td>Aortic isthmic rupture by blast: about a case</td>
<td></td>
</tr>
<tr>
<td>P 207</td>
<td>Aloui</td>
<td>Wafa</td>
<td>411</td>
<td>Mycotic aneurysm of the superior mesenteric artery post endocarditis: about a case report</td>
<td></td>
</tr>
<tr>
<td>P 208</td>
<td>Thabet</td>
<td>Houssem</td>
<td>391</td>
<td>Transfected wound of the common carotid artery, about one case and review of the literature</td>
<td></td>
</tr>
<tr>
<td>P 209</td>
<td>Sendi</td>
<td>Tarek</td>
<td>415</td>
<td>Upper vena cava syndrome on port catheter: about a case report and review of literature</td>
<td></td>
</tr>
<tr>
<td>P 210</td>
<td>Maalej</td>
<td>jihen</td>
<td>403</td>
<td>Management of complications of arteriovenous fistulas: About a monocentric study</td>
<td></td>
</tr>
</tbody>
</table>
Short and Long term Efficacy and Safety Outcome of MitraClip in symptomatic patients with severe Mitral Regurgitation (MR)

AYA Haroon (MD,FRCP)¹, M N Mudah(MD)¹, A Arrif(MD)¹, R Zambahary (MD)¹, A Gzee(MD)¹.
¹National Heart Institute-Malaysia

Introduction: Percutaneous mitral valve (MV) repair using the MitraClip device has been indicated for reduction of significant symptomatic primary MR

Objectives: To identify the short and long term safety and clinical outcomes of MitraClip in primary and secondary MR

Methods: Retrospective analysis of all patients included in the IJN Mitraclip registry followed for 7 years prospectively.

Results: A total of 39 patients with a mean age of 62.9 ± 9.0 years underwent MitraClip procedure for severe (n=36, 92%) and moderate to severe (n=3, 8%) MR. MR was classified as functional in 19 (49%) patients and degenerative in 20 (51%) patients. Mean duration of follow-up 4±2.4years.

Procedural success rate was 33 patients (85%) with an immediate reduction of MR to none or mild in 30 (79%) patients, to moderate in 5 (13%), to moderate/severe in 3 (8%).

In degenerative MR, success rate was 85% and it was 95% in functional MR. Patient with functional MR have statistically significant associated coronary artery diseases, large LV diameter and impaired LV function compared to patient with degenerative MR, as shown in table -1

<table>
<thead>
<tr>
<th>Variables</th>
<th>All (n=39)</th>
<th>Degenerative (n=20)</th>
<th>Functional (n=19)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>62.9 ± 9.0</td>
<td>61.3 ± 9.8</td>
<td>64.5 ± 8.2</td>
<td>0.285</td>
</tr>
<tr>
<td>Gender, Male (%)</td>
<td>30 (77)</td>
<td>13 (65)</td>
<td>17 (89)</td>
<td>0.127</td>
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<tr>
<td>Euroscore Logistic</td>
<td>8.39 ± 9.1</td>
<td>2.76 ± 2.18</td>
<td>14.35 ± 9.98</td>
<td>&lt;0.01</td>
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<tr>
<td>MR severity (%)</td>
<td></td>
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<tr>
<td>Severe (4+)</td>
<td>36 (92)</td>
<td>20 (100)</td>
<td>16 (84)</td>
<td>0.106</td>
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<tr>
<td>Moderate to severe (3+)</td>
<td>3 (8)</td>
<td>-</td>
<td>3 (16)</td>
<td></td>
</tr>
<tr>
<td>CAD (%)</td>
<td>18 (46)</td>
<td>3 (15)</td>
<td>15 (79)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Atrial fibrillation (%)</td>
<td>5 (13)</td>
<td>2 (10)</td>
<td>3 (16)</td>
<td>0.661</td>
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<tr>
<td>LVEF</td>
<td>49.9 ± 17.7</td>
<td>64.7 ± 8.9</td>
<td>34.4 ± 9.0</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>LV EDV</td>
<td>121 ± 55</td>
<td>101 ± 43</td>
<td>140 ± 58</td>
<td>0.025</td>
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</table>

There is statistically significant reduction in Left Ventricular size and volumes p-value <0.01 and 0.021 consecutively and other echo parameters. Survival rate was 93%.

Conclusions: Mitraclip is safe and effective in short and long term with a favorable out-come intern of improvement in patient symptoms, reduction in severity of MR and echo parameters in patients with degenerative as well as functional MR.

Disclosure
I hereby agree that I am authorised to submit this abstract on behalf of all the authors and I agree that the copyright of the above mentioned abstract, shall reside with the Cardiovascular Journal of Africa (Clinics Cardive Publishing (Pty) Ltd.) and there is no conflict of interest to report.

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Utilization of ticagrelor as a sole anti-platelet agent in a patient with high risk of bleeding and an anomalous origin of left anterior descending coronary artery from right coronary artery

## Abstract

Left anterior descending (LAD) coronary artery is classified among rare coronary anomalies. I herein report a 75-year-old diabetic and hypertensive female who presented with typical angina triggered by ordinary activity of one month duration. Coronary angiography showed normal circumflex coronary artery, anomalous LAD originating from the RCA adjacent to the ostium and long 90% stenosis of mid RCA. Percutaneous coronary intervention (PCI) was done using resolute integrity stent resulting in TIMI III flow and she was continued with aspirin 81 mg/day, clopidogrel 75 mg/day, atorvastatin 40 mg/day, metoprolol 25 mg/day and esomeprazole 20 mg twice/day. After two weeks, she came back with profound fatigue, dyspnea, tarry stool, pallor and hemoglobin of 8 g%. Upper gastrointestinal (UGI) endoscopy done after stabilization of the patient with 2 units of whole blood revealed erosive gastritis which was managed with intravenous proton pump inhibitor. Despite this, the patient had to present for 3 other episodes of UGI bleeding over 4 months where she was managed similarly. After the 4th episode of bleeding, aspirin was permanently discontinued while the remaining medications were continued. This was followed by 5 months of clinical stability without bleeding, fatigue or chest pain. Nine months after the initial presentation, she developed chest pain at rest with T-wave inversions involving the inferior leads plus elevated troponin congruent with acute myocardial infarction (MI). A repeat coronary angiography showed a new discrete 90% stenosis of the proximal RCA distal to the origin of the anomalous LAD with normal previously stented segment. This time again, PCI was done using the same type of stent while ticagrelor was utilized as the sole antiplatelet agent. She is comfortable up until now without chest pain or any bleeding episode for two months. Abnormal origin of LAD coronary artery from the RCA is a rare anomaly occurring in less than 0.5% of coronary angiograms. Furthermore, the origin of LAD was very close to the RCA ostium which requires immense care in the course PCI to avoid complications. Doing PCI with a single antiplatelet agent, ticagrelor, has also proven successful in my patient at high risk for bleeding.
Background: Quality of life is an important end point in heart failure studies, as is mortality or hospitalization rate. The Minnesota Living with Heart Failure Questionnaire (MLWHFQ) is the instrument most widely used to evaluate quality of life in research studies. We used this questionnaire to evaluate quality of life in patients with heart failure (HF) at the HF unit of the cardiology department of university hospital center of Casablanca.

Patients and method: A total of 188 patients with HF were recruited between October 2018 and January 2019, followed or seen for the first time at the HF unit. At the moment of evaluation the patients were clinically stable and on optimized drug therapy. Patients with NYHA IV, limited physical activity due to factors other than cardiac were excluded. Twenty-one questions refer to the signs and symptoms of HF, social relationships, physical and sexual activity, work and emotions; were asked. Relationships were sought between questionnaire scores and different clinical and demographic factors.

Results: Mean age was 61±15 years (102 women) 36% presented high blood pressure and 53% were diabetic. Sixty seven % of ischemic etiologies, 28% valvular and 5% of indeterminate etiology. A weak trend toward higher scores was seen with increasing age (p=0.04). A strong correlation (p<0,001) was found between questionnaire scores and functional NYHA class, sex (women had higher scores) and diabetes. The highest scores were observed in patients with valvular disease (48), the lowest in patients with ischemic heart disease. The score MLWHFQ was unrelated to the LVEF.

Conclusion: The questionnaire scores were relatively high in our population. A strong correlation was found between questionnaire score and functional class, and with the number of hospital admissions in the previous year. These results suggest that the questionnaire adequately reflects the severity of the disease.
Background: Infective endocarditis (IE) is a severe infection of the heart, with in hospital mortality rate varying from 15 to 30 %; this results are mainly due to complications such as heart failure and embolic events which are common, occur in 20–50 % of cases of IE. The objectives were to determine the frequency of emboli secondary to IE and to identify factors associated with embolism and impact of these on the prognosis of IE.

Material and methods: Prospective analysis in our department between May 2016 and June 2019. Definite IE by the modified Duke criteria in patients aged ≥ 18 years in service of cardiology of university hospital center of Casablanca. Headache, back pain, seizure, focal deficit, visual changes, abdominal pain, and peripheral ischemia were considered as suggestive clinical features of embolic events. Embolic lesions (EE) were investigate by brain and thoraco abdominal CT scans and abdominal ultrasound scans.

Results: In the study period, 115 episodes of IE were included. Embolism appeared in 42, 8%, all in native valve and symptomatic indicate additional test. Among medical records analyzed for emboli in left-sided IE, 50% were found to the central nervous system (CNS) and 35, 7% to the spleen, the other were to the vascular periphery and to the lungs. Cardiac surgery was performed in 53% patients with EE. Predisposing factors for embolism to the spleen were positive blood cultures ($p=0.05$); those associated to the CNS and peripheral EE were IE of the mitral valve ($p<0.05$) male gender ($p<0.05$) and vegetation size ($p<0.01$). Fifty four % of death with EE versus 45%. Cardiac surgery did not impact on in-hospital mortality (50% VS 50%).

Conclusion: The frequency of embolism and different types of EE were similar to that reported in the literature. The mortality in this study was higher than what reported in the literature (range of 9.6–26%) maybe due to the size of our cohort. Our data reinforces the importance of routine screening for embolic events in those patients. Routine screening for embolism by CT scans in patients with IE seems to be justified. Impact of EE on mortality in IE should be evaluated on a larger sample.
Introduction: Coronary ectasias are relatively rare and poorly understood pathologies. Atherosclerosis is mostly incriminated. They expose to the risk of intracoronary thrombosis by blood stasis. This entity remains poorly known and represents a particular form of coronary pathology. In addition, large thrombus burden in coronary ectasia patients complicated with acute myocardial infarction is also particularly challenging.

Case Report: We report the case of an hospitalized patient for acute coronary syndrome without persistent ST elevation who was presented with thrombotic and ectatic right coronary (Figure 1: A,B). No percutaneous coronary intervention was needed and no thromboaspiration was performed because the artery had already a TIMI 3 flow. Oral anticoagulation (acenocoumarol) was then prescribed in addition to dual antiplatelet (aspirin and clopidogrel), angiotensin-converting enzyme inhibitor, beta blocker, and statin. The patient was discharged after 5 days of treatment. An angiographic control was arranged in 3 months. The result was spectacular with a complete disappearance of the thrombosis (Figure 2: A,B).

Conclusion: Coronary ectasies are rare. The technical difficulties encountered during transluminal coronary angioplasty are related to the anatomical complexity of these lesions. Anticoagulation therapy and the use of covered stents could improve the revascularization of these patients.
A 48 year-old man was admitted because of worsening lower leg edema, dyspnea and decreased exercise tolerance. Echocardiography showed an enlarged left ventricular cavity (65mm) with a reduced ejection fraction according to the Simpson's method (EF=35%). There were no relevant valvular pathologies. Coronary angiography and coronary computed tomography (Fig A) showed that there was no epicardial coronary obstructive disease but a circumflex coronary artery to the right pulmonary artery fistula was revealed. The treatment of the patient included application of diuretic, angiotensin-converting enzyme inhibitors, carvedilol targeting cardiac insufficiency, and transcatheter closure of the coronary artery fistula (Fig B).

Coronary-pulmonary artery fistulas (CPAFs) can present in a variety of clinical settings [1]. CPAFs can have a detrimental effect on perfusion and causing myocardial ischemia secondary to a coronary steal phenomenon [2,3]. In conclusion, the diagnosis of such disease depend mainly on the echocardiogram and angiocoronarography. Therapeutic implications may lead to specific interventions.

References:

Figure A: Angiocoronography indicating that the fistula (arrows) was connecting the right pulmonary artery to the second segment of the circumflex artery. B: Coronary computed tomography angiography revealing the circumflex coronary artery-to-pulmonary artery fistula (arrows).
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**Article**

**English Title**
left heart anevrysm at the university hospital center of brazzaville: about a case

**Category**

**Abstract**
Left cardiac aneurysm is a rare anomaly whose pathophysiology is poorly understood. It is a neo-cavity formed at the expense of one of the cardiac walls with an inlet port. The location on the small mitral valve is exceptional. We report the case of a 19-year-old patient seen in hospitalized for congestive heart failure with breath of mitral insufficiency and medio sternal systolic murmur in wheel radius. Transthoracic echocardiography showed in a two-dimensional, bulky aneurysm along the side wall of the left heart, the etiology is problematic.

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**Article**

**ST2 and intra-hospital mortality in myocardial infarction**

**Category**

Abstract

**Topic**

Acute Coronary Syndromes

**English Abstract**

**Introduction:** Soluble Suppression of Tumorigenicity 2 (ST2) is a biomarker of myocardial fibrosis increasingly recognized as a predictor of morbidity and mortality in heart failure. Its role in the prognosis after a myocardial infarction has not been validated to date. The aim of our work was to evaluate the prognostic value of ST2 for in-hospital mortality after myocardial infarction.

**Methods:** We conducted a longitudinal prospective study including 40 patients admitted for an acute uncomplicated cardiac myocardial infarction at Habib Thameur hospital between April and October 2016. ST2 blood samples were drawn until 72 hours post admission. The primary endpoint was the occurrence of cardiovascular deaths during hospitalization.

**Results:** Patients’ mean age was 60 ± 12 years with a sex ratio of 5.6. Cardiovascular risk factors were dominated by smoking (77%) and diabetes (52%). A history of acute coronary syndrome was found in 17% of cases. Left ventricular dysfunction was observed in 60% of cases. Coronary angiogram showed a three-vessel disease in 16% of cases, two-vessel disease in 25% and single vessel disease in 47%.

The intra-hospital mortality in our series was 10%.

The ST2 assay was positive in 95% of cases with an average value of 164.46 ± 87 ng/ ml and extremes ranging from 21.5 to 250 ng / ml. In our study, the threshold value of ST 2 of 243.8 ng / ml had the best sensitivity-specificity association (AUC = 0.719, 0.5-0.940 CI, \( p = 0.156 \)) with a sensitivity of 75% and a specificity of 63.9%. At this threshold, the negative predictive value of ST 2 was 95.83% and the positive predictive value was 17.65%.

Survival in the ST2 positive group was 56.3% versus 95.7% in the ST2 negative group (\( p = 0.373 \)). In univariate and multivariate analysis, ST2 was not an independent factor associated with the occurrence of death.

**Conclusion:** The measurement of ST2 in post myocardial infarction does not seem to be a good indicator of intra-hospital mortality.

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Introduction: Cardiovascular disease is the leading cause of death in the world, and ischemic heart disease is a serious and common disease. The ESC recommended a minimum of 12 months of dual antiplatelet therapy (DAPT) following acute coronary syndrome regardless of the revascularization strategy adopted and the type of implanted stent. The purpose of our work was to study the duration of DAPT in patients admitted for ACS and to determine the causes of premature discontinuation.

Material and methods: We conducted a longitudinal prospective study including 156 patients admitted for ACS in the cardiology department of Habib Thameur Hospital from May 1st 2017 to November 1st 2018.

Results: The mean age of the patients was 59.3 ± 5 years with a sex ratio of 4 (80.1% male and 20% female). The cardiovascular risk factors were 55.1% hypertension, 40.4% diabetes and 39.1% tobacco. Eighty-five patients (54.5%) were active workers, 73 (46.8%) were retired and 23 (14.7%) were housewives. 75% had national insurance (CNAM) and 24.4% had no insurance. 67 patients (43%) were admitted for a STEMI. All patients were under DAPT on admission.

The coronary artery involvement was tritrocular in 10.9% of cases, bitroncular in 26.9%, and monotruncular in 47.4%. One hundred and twenty-seven patients (83.3%) a PCI: 91 cases of primary PCI (58.3%), four elective PCI (2.6%), one rescue PCI (0.6%) and 31 adhoc PCI (19.9%).

The implanted stents were BMS in 45.5% of cases and DES in 37.2%.

The mean duration of Clopidogrel was 255 ± 122 days with extremes ranging from 20 to 365 days. Eighty-five patients (54.5%) had taken Clopidogrel for less than one year.

The causes of premature discontinuation of Clopidogre reported by patients are: a lack of financial resources in 36.5% of cases, a problem with insurance in 3.2% and the absence of consultations in 12.8% of cases.

Conclusion: In our study, more than half of patients did not take DAPT for one year following an ACS. An improvement of the management of these treatments would allow a better adhesion of the patients.
# Impact of early discontinuation of dual antiplatelet therapy on the occurrence of major cardiovascular events following acute coronary syndrome

**Introduction:** The ESC recommended a minimum of 12 months of dual antiplatelet therapy (DAPT) following acute coronary syndrome regardless of the revascularization strategy adopted and regardless of the type of implanted stent. However, the cost of treatment with clopidogrel and the low socioeconomic level of patients in Tunisia may be an obstacle to adherence to the DAPT. The aim of our work was to study the impact of the early discontinuation of DAPT on the occurrence of major cardiovascular events (ECVM) following ACS.

**Material and methods:** We conducted a longitudinal prospective study including 156 patients admitted for ACS in the cardiology department of Habib Thameur Hospital from May 1st 2017 to November 1st 2018. The characteristics of the patients according to the duration of DAPT were analyzed by comparing two groups:
- group 1: DAPT-P: extended duration of DAPT ≥ 12 months ($n = 71$);
- group 2: DAPT-C: shorter duration of DAPT <12 months ($n = 85$).

**Results:** The mean age of the patients was 59.3 ± 5 years with a sex ratio of 4 (80.1% male and 20% female). The cardiovascular risk factors were 55.1% hypertension, 40.4% diabetes and 39.1% tobacco. 67 patients (43%) were admitted for STEMI. All patients were under DAPT on admission. The coronary artery involvement was tritrocular in 10.9% of cases, bitroncular in 26.9%, and monotruncular in 47.4%. One hundred and twenty-seven patients (83.3%) had PCI (CTA): 91 cases of primary PCI (58.3%), four elective PCI (2.6%), one rescue PCI (0.6%) and 31 adhoc PCI (19.9%). The implanted stents were BMS in 45.5% of cases and DES in 37.2%.

The mean duration of Clopidogrel intake was of 255 ± 122 days with extremes ranging from 20 to 365 days. Eighty-five patients (54.5%) had taken Clopidogrel for less than one year.

Both groups were comparable in terms of socio-demographic and angiographic characteristics.

The occurrence of MACE was comparable in both groups to 5.6% in the DAPT-P group versus 9.4% in the DAPT-C group ($p = 0.378$).

Survival in terms of MACE was 94.4% in the DAPT-P group versus 90.6% in the DAPT-C group ($p = 0.341$)

The death rate was significantly higher in the DAPT-C 9.4% group versus 0%; $p = 0.008$.

**Conclusion:** Our study found a significantly higher death rate in case of premature discontinuation of DAPT.

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Introduction: Inappropriate shock was the main adverse effect of implantable cardiac defibrillation systems. The development of discrimination algorithms has significantly decreased the occurrence of inappropriate shocks in our daily practice. The SecureSense right ventricular (RV) lead noise discrimination algorithm is designed to detect lead fracture, P-wave oversensing, loss of capture and other types of oversensing in order to decrease inappropriate therapy. In our case, SecureSense was used for discrimination of supraventricular tachycardia.

Methods: It is about a 60-year-old woman who has been followed for dilated cardiomyopathy without coronary artery disease. She underwent implantation of a single-chamber ICD with an integrated bipolar single-coil lead for secondary prevention of ventricular tachycardia. The basic rhythm is atrial fibrillation arrhythmia. On the occasion of her third consultation, Telemetry shows a clear discrepancy between NF and FF channels. Near-field (NF) signals that do not correspond to FF (far-field) signals indicate oversensing and inappropriate shocks were not delivered. The chest X-ray showed a displacement of the lead which just the distal tip is left in the RV. Atrial fibrillation arrhythmia detected by the proximal tip is considered a “fast” interval by the NF channel because it is an interval shorter than the longest programmed tachycardia detection interval. Once the algorithm is triggered, sensing begins on the FF EGM channel, which uses a sensing vector between the ICD pulse generator (can) and either the RV coil (RV coil-can) or the RV tip electrode (RV tip-can). This patient was lucky because SecureSense of her ICD uses a sensing vector between can and RV tip-can in such a way that atrial fibrillation arrhythmia was detected by NF but a normal ventricular rhythm was detected by distal tip (FF).

Conclusion: Thanks to SecureSense algorithm inappropriate shocks for secondary displacement of the defibrillation lead have been withheld. This patient was indeed lucky because of the correct detection of the ventricular activity by the RV tip.

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Introduction: Arrhythmogenic right ventricular (RV) dysplasia/cardiomyopathy (ARVC) is a myocardial disease affecting primarily the RV and characterized by the gradual replacement of myocytes by adipose and fibrous tissue that lead to structural and functional abnormalities of the RV. We report a case with ARVC with predominant LV involvement with highly typical ECG and MRI features.

Case report: A 24-year-old male presented with fatigue, dyspnoea and palpitations evolving for 48 hours. Physical examination shows a precarious hemodynamic state with a tachycardia at around 200 bpm. Twelve-lead ECG objective ventricular tachycardia, with LBBB morphology, suggesting a RV origin.

Because of the hemodynamic instability, we opted for an electrical cardioversion. The ECG after the external electric shock shows a regular sinus rhythm with crooked and fragmented QRS fractionated low-amplitude spiking electrical activity beyond the QRS complex in all leads, but most prominent in V1–V6. When we calibrate her ECG to 50 mm/s, We unmask epsilon wave in leads V1 to V6. Echocardiography showed severely hypokinetic and dilated right and left ventricle. Magnetic resonance imaging (MRI) showed a massive dilatation of the right and left heart chambers. Coronary artery disease was ruled out by cardiac catheterization. The patient was diagnosed as having a bi-ventricular arrhythmogenic dysplasia and has received an implantable cardioverter-defibrillator for prevention of sudden death.

Conclusion: Arrhythmogenic right ventricular dysplasia is a myocardial disease. It was described as an RV disease. Nevertheless, left ventricular involvement in patients with right ventricular dysplasia shouldn’t be neglected because it has prognostic impact.

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Background: The least common manifestation of dual AV conduction is an abrupt PR interval change in the setting of sinus rhythm. Whereas isolated cases of this phenomenon have been reported, it is possible to correlate the ECG findings with the anatomy, composition and electrophysiology of the dual AV pathways.

Methods and results: In this study we report eight cases observed in our service. The mean age was 34 ± 23 years. There is a female predominance with a sex ratio of 3/5.

Patients were symptomatic of faintness (4), discomfort (2), palpitations (2). One patient has presented a junctional tachycardia. Two ECG tracings include observations of an abrupt change, either lengthening or shortening of the PR interval, and persisting for varying periods of time. At the other six cases, Holter-ECG showed the PR interval change.

Therapeutic abstention was the rule in five patients. Ablation of the slow pathway was indicated in three patients (the patient with junctional tachycardia and the two who complained of palpitations where electrophysiological exploration confirmed the nodal duality and demonstrated intranodal reentrant tachycardia.

Discussion: Dual AV conduction is most likely a variant of normal AV conduction with one pathway having a shorter refractory period and a longer conduction interval. That the two pathways are probably anatomic structures is suggested by termination of reentrant tachycardia with ablation of the slow or fast pathway located in the atrium.

Conclusion: The behavior of the PR interval is consistent with dual AV conduction. Dual atrioventricular node conduction during sinus rhythm informs us about the possible mechanism of junctional tachycardia.

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**Background:** Smoking is one of the major cardiovascular risk factors. Although preventive drug therapy is a priority after acute coronary syndrome (ACS), less is known about lifestyle changes, including regular physical exercise and specifically smoking cessation. Actually, quitting smoking is recommended after an ACS (Class I – Level A) according to the ESC recommendations. We aimed with this study to determine the main predictive factors for smoking cessation after an ACS and the magnitude of abstinence after six months of follow-up.

**Methods:** This study was prospective and included 145 patients who had been hospitalized for ACS from May 2015 to August 2016 in Department B of Cardiology in Fattouma Bourguiba hospital in Monastir. They were active smokers, motivated to stop smoking and were able to sign lighted consentement and ready to be present every two weeks at the consultation.

**Results:** This study included 145 patients. The mean age was 55 ± 10 years. 88% patients were tagged as big smokers. We were able to get a stop of the tobacco in 49%.

From subanalysis result smoking cessation six months after an acute coronary syndrome have significant statistic result to adherence to the smoking cessation protocol (therapeutic compliance (OR=18; p<0.001), to nicotine dependence (OR=0.3; p=0.03), to duration to be hospitalized in intensive care cardiology unit (OR=6; p=0.007) and to diabetes (OR=7.75,p=0.002).

**Conclusion:** Quitting smoking is a highly effective measure to reduce morbidity and mortality in patients after ACS. That's why it should be a part of an ACS management as well as medical therapy.

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Background: Cardiac tumours may be symptomatic, but they are more frequently discovered incidentally during an imaging examination performed for an unrelated indication. Cardiac ectopic thyroid tissue is a rare abnormality. The probability of malignancy in such tissue is less than 1%.

Case presentation: We describe a case of a 50-year-old women, with no particular pathological history, who presented with dyspnea. Echocardiography showing homogeneous, rounded, echogenic mass measuring 36 × 27 mm in diameter, located in the right ventricular outflow. The tumor was completely resected. Histological examination revealed normal thyroid parenchyma. Further investigation revealed no other ectopic sites. After 12 years of follow-up, the patient is in a good health with no recurrence.

Conclusion: In conclusion, although cardiac tumors are rare, they are being increasingly recognized thanks to modern imagery techniques.

Keywords: Ectopic, Thyroid, Tumor, Heart

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Introduction: Cardiogenic shock (CS) is considered as a devastating complication of the ST elevation acute myocardial infarction (STEMI). Its mortality remains high although the huge progress in critical care and coronary revascularization.

Aim: We aim to determine the biological predictive factors of in-hospital mortality in CS complicating acute STEMI in the MIRAMI registry. Materials and methods: It is a retrospective, mono-centric study including 267 patients from the MIRAMI (MonastIR Acute Myocardial Infarction) registry between 1995 and 2016. These patients presented a CS complicating a STEMI which occurred at admission or during their hospitalization. We studied the biological features of these patients and analyzed the predicting factors of their in-hospital mortality. Results: The incidence of CS was 15%, mostly in men (77.9%). The mean age was 64.18 ± 12.5 years. Smoking was the most frequent risk factor (62.5%). Diabetes and hypertension occurred respectively in 44.9% and 34.5% of patients. The mean hemoglobin and creatinine rates were respectively 12.5 ± 2.3 g/dl and 142.2 ± 88.26 µmol/l. Anemia was found in 105 patients (39.3%) and significantly more often in elderly (≥ 60 years) (p < 0.001). Renal failure was diagnosed in 159 patients (59.6%) mainly in women and elderly (p < 0.001 respectively). Hyperglycemia was found in 163 patients (61%). Leukocytosis was found in 186 patients (69.9%). Elevated myocardial necrosis markers (CPK, LDH and troponin) was found in most patients. In hospital mortality was 49.1%. Biological predicting factors of in-hospital mortality in a univariate analysis were: anemia (p = 0.001), renal failure (p < 0.001), hyperuremia (p = 0.002), hyperglycemia (p < 0.001), CPK > 500 mmol/l (p = 0.04) and LDH > 5000 mmol/l (p = 0.024). In a multivariate analysis, only renal failure was restrained as an independent predicting factor of in-hospital mortality (p < 0.001).

Conclusions: The incidence of cardiogenic shock is significant with a high in hospital mortality. The treatment strategy should be based on an urgent and multi-disciplinary approach taking in account all the biological abnormalities.
Introduction: Cardiogenic shock (CS) is considered as a devastating complication of the ST elevation acute myocardial infarction (STEMI). Its mortality remains high although the huge progress in critical care and coronary revascularization.

Aim: We aim to determine the clinical predicting factor of in-hospital mortality in CS complicating acute STEMI (CS-STEMI) in the MIRAMI registry.

Materials and methods: It is a retrospective, mono-centric study including 267 patients from the MIRAMI (MonastIR Acute Myocardial Infarction) registry between 1995 and 2016. These patients presented a CS-STEMI which occurred at admission or during their hospitalization. We studied the clinical features of these patients and analyzed the predicting factors of their in-hospital mortality.

Results: The incidence of CS was 15%, mostly in men (77.9%). The mean age was 64.18 ± 12.5 years. Smoking was the most frequent risk factor (62.5%). Diabetes and hypertension occurred respectively in 44.9% and 34.5% of patients. The mean delay from symptoms onset to hospitalization was 5 ± [3, 10] hours. The mean transportation delay was 60 ± [30-90 minutes]. Anterior territory of the STEMI was the most frequent (53.2%). Half of the patients had a multi-vessel disease and the LAD was the culprit artery in 48.3% of cases. In hospital mortality was 49.1%. The main clinical predicting factors of in-hospital mortality in a uni-variate analysis were: age ≥60years (p<0.019), female gender (p=0.001), hypertension (p<0.001), diabetes (p=0.003), hospitalization delay >6 hours (p=0.034), transportation delay >60 minutes (p=0.034) and a heart rate >90 bpm. Smoking is found to be a protecting factor (p=0.006). In the multivariate analysis, none of these factors was restrained as an independent predicting factor of in-hospital mortality.

Conclusion: The incidence of CS is significant with a high in hospital mortality. The treatment strategy should be based on an urgent and multi-disciplinary approach.

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Introduction: Cardiogenic shock (CS) is considered as a devastating complication of the ST elevation acute myocardial infarction (STEMI). Its mortality remains high although the huge progress in critical care and coronary revascularization.

Aim: We aim to determine the impact of hyper-glycaemia on in-hospital prognosis of CS complicating an acute STEMI (CS-STEMI) in the MIRAMI registry.

Materials and methods: It is a retrospective, mono-centric study including 267 patients from the MIRAMI (MonastIR Acute Myocardial Infarction) registry between 1995 and 2016. These patients presented a CS-STEMI which occurred at admission or during their hospitalization. We studied the impact of hyper-glycaemia on their in-hospital prognosis.

Results: The incidence of CS was 15%, mostly in men (77.9%). The mean age was 64.18 ± 12.5 years. Smoking was the most frequent risk factor (62.5%). Hypertension was found in 34.5% of patients. Diabetes occurred in 44.9% of patients, mainly type II (85%). Most of the patients were under oral anti-diabetic (68.3%) treatment and only were taking insulin (35%). The mean glycaemia level was 14.98 ± 8.3 mmol/l. A hyperglycemia was found in 163 patients (61%). A newly diagnosed diabetes was found in 60 patients (22.4%). In a uni-variate analysis, diabetes and hyperglycaemia were associated with a significant raise in in-hospital mortality ($p=0.003$; $p<0.001$; respectively). A significant raise in mortality was also proportional to glycaemia levels.

Conclusion: Mortality in CS-STEMI is high and it seems to be higher in diabetic patients. Early diagnosis and treatment of diabetic patients should be undergone in addition to the control of the other cardiovascular risk factors to insure in-hospital mortality reduction.
Introduction: Cardiogenic shock (CS) is considered as a devastating complication of the ST elevation acute myocardial infarction (STEMI). Its mortality remains high although the huge progress in critical care and coronary revascularization.

Aim: We aim to determine the predicting factors of early invasive strategy failure in CS complicating an acute STEMI in the MIRAMI registry.

Materials and methods: It is a retrospective, mono-centric study including 267 patients from the MIRAMI (MonastIR Acute Myocardial Infarction) registry between 1995 and 2016. These patients presented a CS complicating a STEMI which occurred at admission or during their hospitalization. We studied the features of patients who underwent an early invasive strategy and analyzed the predicting factors of procedural failure.

Results: Early invasive strategy was performed in 114 patients (42.7%) at a mean delay of 6.24 ± 4.82 hours. Primary PCI was performed in 99 patients and rescue PCI in 15 patients. The mean age of this population was 61.1± 12 years and male gender was predominant (78.1%). The major cardiovascular risk factors were: Tobacco (64%), diabetes (46.5%) and hypertension (36%). History of coronary revascularization by PCI or CABG was found in 10.5% of patients. CS was present in admission in 28.1% of patients. Anterior territory of the STEMI was found in almost half of patients (49.1%). Multi-vessel disease was found in half of patients and the culprit artery was the LAD in 51.7% of cases. Procedural success was obtained in 63.2% of patients. In a uni-variate analysis, predictors of procedural failure were: Female gender ($p=0.007$), diabetes ($p=0.004$), mean procedural delay ≤ 6 hours ($p<0.001$), Hyper-uremia ($p=0.007$) and PCI with balloon only ($p<0.001$). Paradoxically, tobacco was restrained as a predictor of early invasive strategy success ($p=0.048$).

Conclusion: The incidence of CS is significant with a high in-hospital mortality. The treatment strategy should be based on an urgent and multi-disciplinary approach.
Introduction: Cardiogenic shock (CS) is considered as a devastating complication of the ST elevation acute myocardial infarction (STEMI). Its mortality remains high although the huge progress in critical care and coronary revascularization.

Aim: We aim to determine the impact of thrombolysis on in-hospital mortality in CS complicating acute STEMI (CS-STEMI) in the MIRAMI registry.

Materials and methods: It is a retrospective, mono-centric study including 267 patients from the MIRAMI (MonastIR Acute Myocardial Infarction) registry between 1995 and 2016. These patients presented a CS-STEMI which occurred at admission or during their hospitalization. We studied the features of patients treated with thrombolysis and analyzed the predicting factors of their in-hospital mortality.

Results: Thrombolysis was performed in 83 patients (31.1%) with a significant decreasing tendency over the study years ($p<0.001$). The mean age of these patients was 60.5 ±12.6 years and they were mostly males (80.7%). The most common cardiovascular risk factors were: diabetes (43.4%), hypertension (26.5%) and tobacco (62.7%). History of coronary PCI or CABG were found in 2.4% and 1.2% respectively. CS was found in admission in 21.7% of patients. The anterior territory of the STEMI was the most frequent 51.8%. The mean LVEF in this population was 41 ± 11.4%. The mean delay between symptoms and thrombolysis was 4.2 ± 2.9 hours. The thrombolysis was performed in the pre-hospital phase in 31.3% of cases by the SAMU's team. The most used agent was Streptokinase 84%. Success was obtained only in 45.8% of patients. We noticed that delay and the agent used did not influence procedural success. Bleeding occurred in 11 patients (13.2%). Thrombolysis did not have a positive impact on in-hospital survival ($p=0.075$) in a univariate analysis and only its failure was predictive of in-hospital mortality ($p=0.001$).

Conclusion: The incidence of CS is significant with a high in hospital mortality. Although its benefits in STEMI, thrombolysis is not effective in CS-STEMI so that the treatment should be based on an urgent invasive strategy guided by a multi-disciplinary approach.
Introduction: Cardiogenic shock (CS) is considered as a devastating complication of the ST elevation acute myocardial infarction (STEMI). Its mortality remains high although the huge progress in critical care and coronary revascularization.

Aim: We aim to determine the impact of cardiovascular risk factors on in-hospital mortality in CS complicating acute STEMI (CS-STEMI) in the MIRAMI registry.

Materials and methods: It is a retrospective, mono-centric study including 267 patients from the MIRAMI (MonastIR Acute Myocardial Infarction) registry between 1995 and 2016. These patients presented a CS-STEMI which occurred at admission or during their hospitalization. We studied the incidence and impact of cardiovascular risk factors on in-hospital mortality.

Results: The incidence of CS was 15%, mostly in men (77.9%). The mean age was 64.18 ± 12.5 years. The most frequent risk factor found was tobacco 62.5% mostly in men (76.9% vs 11.9%; \( p < 0.001 \)). The majority of smokers were active (79.65%) and the mean consumed quantity was 47 ± 23.43 YP. Diabetes was found in 44.9% of patents and it was mostly type II. The majority of these patients were under oral anti-diabetic drugs and only 35% were treated by insulin. Hypertension was found in 34.5% of patients, the majority were under hypertensive treatment (75.5%). Dyslipidemia was found only in 9.4% of patients. Diabetes (\( p = 0.003 \)), hypertension (\( p < 0.001 \)) were restrained as predicting factors of in-hospital mortality in a uni-variate analysis. Dyslipidemia (\( p = 0.466 \)) did not have an impact on mortality. Tobacco was paradoxically associated to a lower mortality and it was restrained as a protective factor (\( p = 0.006 \)).

Conclusion: The incidence of CS-STEMI is significant with a high in hospital mortality. Screening and early treatment of cardiovascular risk factors helps alleviate its heavy burden.
**Background:** Left ventricular ejection fraction (LVEF) is the method of choice for prognostic evaluation of chronic heart failure with reduced ejection fraction. However, it has many limitations. Global Longitudinal Strain (GLS) is an emerging method that enables the quantification of systolic function of left ventricle. It has been correlated with the prognostic. But, the cut-off value for establishing long term adverse events is not well defined.

The aim of this study was to determine the prognostic value of GLS in chronic heart failure with reduced ejection fraction and the cut-off predicting the major adverse events.

**Methods:** This was a single-center prospective study of ambulatory patients seen in the department of cardiology of Abderrahmen Mami between January 2016 and December 2018. It included 60 patients with chronic heart failure and reduced ejection fraction ≤40% in sinus rhythm. They all underwent clinical and two-dimensional echocardiogram evaluation. The GLS was measured with Automated Function Imaging’s method. We have determined the occurrence of these major events: mortality, sudden cardiac death or major ventricular arrhythmia and hospitalization for acute decompensated heart failure.

**Results:** The mean age of our population was 53 ± 12 years. The mean of ejection fraction and GLS was 26 ± 8% and -7 ± 4% respectively. During the mean of follow-up duration of 16 ± 10 months, cardiac events occurred in 50% of the population including 17% of mortality, 7% of major ventricular arrhythmia and 45% of hospitalization. The cut-off value of GLS that predicted long term adverse events was -10.4%. However, the prognostic significance was more important for the prediction of acute decompensated heart failure only ($p = 0.03$) with a cut-off value of -8.15%. GLS provided additional benefit over left ventricular ejection fraction and it was the strongest prognostic echocardiographic parameter.

**Conclusion:** The use of GLS is feasible and simple method that provide prognostic stratification in chronic heart failure with reduced ejection fraction. The cut-off value was -10.4% for prediction of the risk of major cardiac events.
Introduction: Isolated patent arterial duct (PDA) is found in around 1 in 2000 full term infants, constituting nearly 10% of all congenital heart disease. Transcatheter closure of PDA is technically challenging and may be accompanied by a 38% incidence of residual shunts.

Objective: The aim of this study was to assess the immediate and short-term results of anterograde catheter closure of a moderate-to-large-sized patent ductus arteriosus using the Amplatzer duct occluder (ADO) device.

Methods and results: Percutaneous closure of PDA was performed in 96 patients between 2005 and 2013, in the Department Of Cardiology Sahloul Tunisia. The patients were between 11 months and 36 years and weighed between 5kg and 57kg (median 8.4). There were more female (59=61,5%). Infants made up 96% of the total patients. The PDA measured from 2 to 9,7mm (mean 4,56) at the narrowest diameter. The gradient aorta-pulmonary artery was 74,88mmHg+/-23,31. Complete angiographic closure was seen in 91 of 96 patients. On color Doppler the closure rates at 1 month after implant were 66% and 97%. Device embolization occurred in three patients; in two this was spontaneous, and in the other it was due to catheter manipulation during post implant hemodynamic measurement. Mild aortic narrowing was seen in an infant.

Conclusion: Patent ductus arteriosus occlusion using ADO is safe and efficacious. It is particularly useful in symptomatic infants and small children with relatively large PDA. Embolization can be minimized by selection of appropriate sized devices, and caution should be exercised in infants <5 kg.
A case report: The antiphospholipid syndrome (APS) is a common cause of both arterial and venous thrombosis, its role in stent thrombosis is less clearly documented. We present a case of a 46-years-old female diabetic who had her first angina at the age of 34 years. She received percutaneous intervention of a proximal left anterior descending artery stenosis as initial treatment and she was later diagnosed with antiphospholipid syndrome (APS) complicated with uveitis treated with long-term oral anticoagulation and corticosteroids. Anticardiolipin and anti B2 Glycoprotein antibodies were both positive. The patient was admitted for acute inferior myocardial infarction after nine years, she was transferred to the cardiac catheterization laboratory to undergo primary percutaneous coronary intervention and Bare-metal Stent was placed. 40 days after her discharge, the patient returned to recurrent chest pain. Late stent thrombosis of the BMS was discovered and angioplasty with balloon was performed.

Conclusion: Primary antiphospholipid syndrome should be considered as a cause of acute myocardial infarction. Oral anticoagulant treatment does not always protect from intra-stent thrombosis as in this case

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Introduction: Behcet’s disease is a chronic multi-systemic inflammatory disorder characterized by recurrent orogenital aphthous ulcers, uveitis, and skin lesions. Vascular involvement affects the veins more commonly than the arteries of these patients. Coronary arterial involvement is very rare but can cause serious complications when it occurs.

Case report: We report on a 43-year-old man, who was admitted with the diagnosis of subacute lateral myocardial infarction. His only cardiovascular risk factor was a smoking history of four pack years. Coronary angiography revealed multiple aneurysms in the left artery. Physical examination revealed orogenital aphthous ulcers, arthralgia. And the pathergy test was positive.

The diagnosis of Behcet’s disease was confirmed.

The patient was treated with immunosuppressive therapy.

Conclusion: We suggest that Behcet’s disease should be kept in mind in the etiology of coronary aneurysms and every Behcet’s disease should be evaluated for coronary aneurysms.
Cardiac myxoma is a rare disease, with an annual incidence of approximately 0.5 per million. Embolization is a well-known hazard of myxoma and can be a presenting feature. In most cases, emboli block one organ at the initial presentation of the patient – whereas multiple visceral embolisation at the same time is very uncommon.

We report an atrial myxoma case with acute cerebral, spleen and kidney emboli: The patient was a 52-year-old Tunisian man with no past history of rheumatic fever or cardiac disease. He developed a sudden onset of right-sided hemiplegia and slurred speech. He was febrile (38.7°). Brain computed tomography (CT) scan done 1 hour after the symptoms was normal. Some hours after admission the patient developed abdominal pain. ACT scan showed multiple filling defects in both kidneys and an infarct of the spleen.

The patient was thought to have infective endocarditis. Vital signs were stable with a blood pressure of 130/75 mmHg, respiratory rate of 12 breaths per minute and temperature of 38.8°. Pulses were intact bilaterally in upper and lower extremities with no edema. The electrocardiogram demonstrated regular sinus rhythm and the chest x-ray was normal. Laboratory findings were as follows: WBC 8.7 K/ul, Hb=13.3 g/dl, platelets = 243000/mm3, CRP=161, plasma creatinine = 89 u/l. Blood cultures were negative. A transthoracic echocardiography examination revealed a mobile mass, 2×2.3 cm, attached to the inter atrial septum. There was no mitral regurgitation nor obstruction. On transoesophageal echocardiography this mobile mass was measured 2.7×2.8 cm, appeared sessile and was attached to the upper part of the atrium septal. The mass had multiple lobes, was highly echogenic, irregular, with frond-like, mobile edges.

The patient was treated by antibiotics (ampicillin and gentamicin) for 2 days but he remained febrile with abdominal pain and the same neurological defect. Surgeons didn’t indicate operation on the abdomen. The patient underwent surgical removal of the mass. Histologic examination confirmed a benign atrial myxoma including lax connective tissue with myxomatous and endothelial cells.

This case is unusual in causing such widespread concurrent multiple organ damage, including stroke. It illustrates the importance of careful clinical examination and early use of appropriate imaging tools. A diagnosis of myxoma should be considered in all cases of embolisation, particularly if more than one site might be involved.
Introduction: Anomalous origin of the left coronary artery from the pulmonary artery and one of the causes of myocardial ischemia. The usual clinical course is severe left-sided heart failure and mitral valve insufficiency presenting during the first months of life.

Case presentation: We report the case of a 6-month-old Tunisian girl who presented with dilated cardiomyopathy. Echocardiography suspected anomalous origin of the left coronary artery. The definitive diagnosis of anomalous origin of the left coronary artery from the pulmonary artery was reached by multislice computed tomography and coronary angiography.

Conclusion: In cases of dilated cardiomyopathy, anomalous origin of the left coronary artery from the pulmonary artery syndrome has to be kept in mind as a surgically correctable cause.
Patent ductus arteriosus (PDA) accounts for 10% of all congenital heart diseases and device closure is considered to be the treatment of choice. However, percutaneous closure in presence of pulmonary artery hypertension (PAH) remains a challenge. The closure of large PDA with PAH is difficult due to increased risk of device embolization and right heart failure. Data on patient selection, technical considerations, and complication are scarce. Even more challenging is retrieval of an embolized Amplatzer duct occluder. We present a problematic transcatheter closure of a large PDA with severe pulmonary hypertension.

A 5-year-old female child was brought to medical attention due to shortness of breath and fatigue. She had no signs of Eisenmenger syndrome. Her chest X-ray showed cardiomegaly and increased pulmonary vascularisation. Her echocardiogram showed a large PDA of 6 mm with low velocity bidirectional shunting. The tricuspid insufficiency (5.1 m/s) suggested severe pulmonary arterial hypertension. She had invasive evaluation to assess if there is a component of reversible pulmonary vascular resistance that be expected to regress after PDA closure: cardiac catheterization confirmed a large PDA with systemic pulmonary artery pressures (PAP) decreased significantly after administration of NO. With test occlusion using the ADO, the pulmonary artery pressure dropped down while the descending aortic pressure increased which suggested that the procedure would be successful. The patient underwent successful PDA closure using ADO II device. Post-procedure, the patient was doing well. On the following day, no residual shunt nor obstruction was observed. The patient was discharged from the hospital with sildenafil home therapy 2 days later.

ETT 5 months later showed patency of the ductus arteriosus and suggested persistently elevated pulmonary artery pressures and chest X-ray showed the amplatz device in the descending aorta. After discussion with the surgeons, we decided to extract the device by aortotomy. The surgical device retrieval was done successfully. The ductus wasn’t closed because of irreversible systemic pulmonary pressures in intraoperative investigation.

The late migration of Amplatz duct occluder would be due to pulmonary artery hypertension crisis. ADO devices in PDA closure may not be appropriate in cases with pulmonary hypertension, and may result in device embolization into the aorta. Ventricular septal defect occluder would be more suitable in the case.

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Objectives: The CIN (contrast induced nephropathy) is a common cause of acute renal failure with the waning of angiographic procedures. This complication is a growing concern because of its impact on morbidity and mortality of patients, especially in cardiac patients undergoing coronary angiography. This is a particular population where renal function is often decreased see altered upon exposure to contrast medium. The aim of this study was to determine the incidence of contrast-induced nephropathy in patients with a coronary angiography procedure in our service and assess their predictors.

Population and methods: We identified all patients admitted to the cardiology department for an angiography procedure between January 2014 and December 2018. We included 746 patients who passed by catheterization lab and undergoing fluid injection diagnostic or therapeutic target in contrast under urgent situations or deferred, including 738 patients for whom we had a complete set of measurements of serum creatinine and we performed a univariate analysis identified factors.

Results: The incidence of contrast-induced nephropathy in our population is 16.4%. Our univariate analysis identified several risk factors such as GFR <60ml / min / 1.73m² (p = 0.005, CI = [1.264 to 4.251]) and LV systolic dysfunction LVEF <35% (p = 0.006 ; CI = [1.195 to 3.090]), hypotension (p = 0.005, CI = [1.644; 13]), the preparation of the patient (p = 0.017, CI = [1.112; 3.157]), amount of PC (p = 0.0001 CI = [3500, 7926]), IEC socket / ARA II (p = 0.046, CI = [1.005; 3.177]).

Conclusion: The CIN is a complication confirmed in our population admitted to angiography. Our results suggest that renal failure at admission and LV systolic dysfunction, low blood pressure at the time of injection of PC, the IEC socket are predictors.

Discussion: These results contrast with data from published literature, which can be explained in part by changes in our practices, but also by epidemiological characteristics specific to our population and the size of our cohort. However, they argue for consideration of the increased risk of contrast-induced nephropathy in patients at risk, including providing a more prolonged monitoring of renal function in post-angiography.

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Disclosure

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Background: The current recommendations regarding the estimation of left ventricular filling pressures are based on expert consensus and have not been validated. Through this work, we tried to evaluate the reliability of the actual algorithm in comparison with the left cardiac catheterization and to compare the performances of the latter with those of the algorithms published in 2009.

Methods: We enrolled 100 adult patients recruited at the Cardiology department of Menzel Bourguiba hospital and scheduled for coronary angiography for the period between December 2017 and May 2018. An estimation of filling pressures by transthoracic echocardiography and cardiac catheterization on the same day was performed.

Results: The mean age of our patients was 62.79 years ± 10.35 with a male predominance (sex ratio at 3.34). The majority had coronary artery disease (66%). The mean ejection fraction was 53% ± 13. Using the actual algorithm; we identified 51 patients with elevated filling pressures, 46 with normal pressures and three with indeterminate pressures. Using the 2009 algorithms, 45 patients had elevated filling pressures, 51 had normal pressures and four had indeterminate pressures. The 2016 algorithm was superior to those published in 2009 compared to the invasive estimate. In fact, its sensitivity and specificity were 70.14% and 86.66% with an accuracy of 75.25% versus 62.21%, 86.66% and 69.79% respectively for the 2009 algorithms. Analysis, in case of preserved systolic function, showed a great decrease in the results of the 2009 algorithms while the 2016 algorithm remained valid. Regarding echographic parameters, a wide variability of correlations with invasive pressures was noted. The E/e' ratio had the highest coefficient value (r = 0.47) whereas no correlation was found for the tricuspid regurgitation jet velocity.

Conclusion: In addition to its simplicity, the actual decision tree for estimating left ventricular filling pressures seems reliable and more efficient than the previous one.

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Background: Obstructive sleep apnea syndrome (OSAS) is involved in various cardiovascular illnesses.

Aim: The aim was to evaluate the interest of its diagnosing and taking in charge

Methods: This was a study of 100 patients diagnosed as having severe OSAS, who benefited from continuous positive pressure ventilation.

Results: The average age was of 64 years with female predominance (68%). The most frequent risk factors were the HT (71%), diabetes (50%) and inactivity (44%). The diagnosis of severe OSAS was suspected on presumptions'elements. Nocturnal ventilatory polygraphy confirmed the diagnosis. We have studied the evolution after equipping with continuous positive airway pressure (CPAP) for HT, atrial fibrillation, heart failure, coronary insufficiency, ventricular rhythm disorders and pulmonary arterial hypertension. After one year of follow-up, we noted a significant improvement in functional signs. The blood pressure was balanced for 63% of patients with a decrease in systolic and diastolic blood pressure. Only 2 patients presented a recurrence of AF. A decrease in the ventricular complexes number at the rhythmic Holter was observed in case of ventricular rhythm disorders. An absence of decompensated heart failure episode was obtained in 91% cases of cardiac insufficiency. None major cardiovascular event was noted. In case of PAH, an average reduction in systolic pulmonary arterial pressure of 4 mmHg was noted.

Conclusion: The OSAS is linked to various cardiovascular consequences. Its diagnosis and equipment by CPAP seems to be contributive in the management of functional signs and cardiovascular consequences.
An LAD in all its states

This clinical case concerns a 47-year-old hypertensive man referred for a planned PCI of an LAD-diagonal branch bifurcation lesion. Following a provisional strategy, this procedure was unfortunately complicated by a triple nightmare: perforation, dissection and thrombosis.

For each complication, we share our management strategy following our facilities.
Background: Heart failure is going steadily to be the most common cause of death after tumors. Despite advances in the treatment of patients with chronic heart failure (HF) these patients remain at high risk for hospitalization and/or death. In despite of guidelines published by European Society of Cardiology (ESC) there were some difficulties to put them into practice.

Methods: It was a retrospective study of 130 HF patients. We included all patients with systolic HF defined by a left ventricular ejection fraction ≤45%, regardless of etiology. We recorded in the medical file the clinical, biological, ultrasound data and medical management.

Results: 130 patients (11 female, 50 male; median age: 58 years) have been included our between October 2011 and June 2012.

47 patients (77%) were treated with ACE-inhibitors (ACEI), 14 patients (23%) with angiotensin-receptor-blockers (ARB), 58 patients (95%) with beta-blockers (BB) and 46 patients (75%) were treated with mineralocorticoid-receptor-antagonists (MRA). Of the 47 patients treated with an ACEI 13 (28%) were on recommended daily dose while 12 (25%) could not be further uptitrated due to symptomatic hypotension.

Of the 14 patients treated with an ARB 6 (42%) had reached maximum dose while another 4 (29%) could not undergo further optimisation due to hypotension. Of the 58 patients treated with a BB 15 (26%) were on ESC-recommended daily dose while 12 (21%) could not be further uptitrated due to bradyarrhythmia and 13 (22%) due to symptomatic hypotension. Of the 46 patients treated with MRA 14 (30%) had reached optimal dose while 8 (17%) could not attain target dose due to hyperkalemia and in 20 (44%) patients no reason was specified.

Conclusion: Only a minority of chronic heart failure patients is on ESC-recommended daily dose of medication. The reasons for not reaching target dose can mostly be attributed to specific side effects of the drugs used.

English Title

Medical management of chronic heart failure: a retrospective study

Abstract

Heart Failure

English Abstract

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Conclusion: Only a minority of chronic heart failure patients is on ESC-recommended daily dose of medication. The reasons for not reaching target dose can mostly be attributed to specific side effects of the drugs used.
Background: Acute myocarditis is an inflammation of the heart muscle. Its unpredictable evolution justifies the importance of its early recognition. The clinical polymorphism associated with the lack of sensitivity of conventional diagnostic means make diagnosis a challenge for the clinician. However, the magnetic resonance imaging has been of great interest for the differential diagnosis as well as for the evolutionary follow-up of this pathology.

The purpose of this work was to determine the different clinical, echocardiographic and progressive aspects of acute myocarditis.

Methods: This was a descriptive, retrospective study, including 31 patients hospitalized for acute myocarditis at the cardiology department of the Internal Security Forces Hospital-La Marsa between 2011 and 2017. All patients had an electrocardiogram, troponin bioassay, cardiac echography and cardiac magnetic resonance imaging.

Results: The mean age of our patients was 36.5 ± 13.3 years [17-63] with a clear male predominance (sex ratio = 6.75). Smoking was the most common cardiovascular risk factor (60%). Fifty percent of the population had only two cardiovascular risk factors. The most common clinical picture was acute chest pain (84%) preceded by influenza-like illness (53%). The electrocardiogram was pathological in 97% of cases. Hyperleukocytosis was objectified in 33% of cases. Elevation of C-reactive protein was present in 80% of cases. As for troponins, they were high in 94% of cases. Overall myocardial contractility was conserved in 84% of cases with segmental kinetic disorders in 45%.

Cardiac magnetic resonance imaging showed pericardial effusion (10%), spontaneous myocardial hypersignal in triple-reversal-T2 recovery (42%) and which corresponded to the zones of late enhancement. Late contrast enhancement was predominant at the lateral wall (39%), with epicardial involvement occurring in 100% of cases.28 patients had a favorable outcome after a follow-up of 24 months. However, there was only one case of death at 3 months and two cases that progressed to dilated cardiomyopathy.

Conclusion: Acute myocarditis is mainly a disease of the young male subject. It can have very different clinical pictures, posing a major diagnostic problem. In this context, cardiac magnetic resonance imaging is of decisive interest for the differential diagnosis.
Background: Atrial fibrillation (AF) is the most common sustained cardiac arrhythmia. It is responsible for 15% to 20% of strokes. Prevention of thromboembolic risk is therefore a priority. The purpose of this study is to compare the two scores CHA2DS2-VASc and CHADS2 in predicting of thromboembolic risk.

Methods: Retrospective descriptive and analytical study of 122 cases of patients admitted for AF. An analytical study of the impact of different calculated scores (CHADS2, CHA2DS2-VASc, HASBLED) on the risk of thromboembolism and bleeding was performed.

Results: Patient’s mean age was 60.1±15 years. Forty four were women (36.1%). Mean CHA2DS2-VASc score was 2.02±1.65 and HASBLED score 1.02±1.12. 55.7% had CHA2DS2-VASc score≥2. Reduction of AF to sinus rhythm was seen in 65% of patients after a first episode. This reduction was most often spontaneous (37%) or obtained by oral amiodarone (36%). Diabetes (HR=1.46, 95% CI [0.53 to 4.01], p=0.025) and a history of stroke (HR =2.26, 95% CI [0.30 to 17.05], p=0.028) and cardiac failure (HR=4.52; 95% CI [0.39-52.40]; p=0.009) were independent predictors of recurrent AF. Among the 68 patients at high risk of thromboembolism, only 47 were treated with vitamin K antagonists (69%). There was no significant difference between the two scores CHA2DS2-VASc and CHADS2 in predicting thromboembolic risk. There was no statistically significant difference in terms of overall survival or ischemic or hemorrhagic events among patients managed according to ESC recommendations (64% of patients) and those in whom these recommendations were not observed (respectively: n=5 vs. n=7, p=0.87, n=1 vs. n=3, p=0.52).

Conclusion: CHA2DS2-VASc Score is high in our AF population. Our compliance with international recommendations is correct, but this does not reflect improved outcomes for our patients. It would be interesting to study the coverage by vitamin K antagonists that could explain this discrepancy.
Introduction: Celiac disease (CD) is a chronic autoimmune enteropathy occurring in genetically predisposed individuals following ingestion of wheat gluten and related protein fractions of other grains. We report an autoimmune myocarditis case as a first presentation of celiac disease in a 42 year old man.

Case report: We report the case of a 42 year old man, presented in 2015 chest pain with significant rise of troponins and normal electrocardiogram. Coronary angiography showed normal arteries. Cardiac MRI confirmed the diagnosis of myocarditis associated with medio-septal interventricular communication. The biological analysis was without any particular anomaly except iron deficiency anemia (HB at 10.5 g / dl). The etiological survey was negative and the myocarditis was labeled viral. One year later, the patient presented recurrent strokes. He had no embolicogenic heart disease or arterial dissection. Thrombophilia testing was without anomalies. The diagnosis of CD was made because the positivity of the serology of CD (anti-transglutaminase antibody 1/100 and anti-endomysium antibodies strongly positive) with a stage IV-V of Marsh total villous atrophy noted at esophagogastroduodenoscopy with histological examination. The gluten-free diet has been started and the patient has gained 4 kg within one month.

Conclusion: Myocarditis and stroke are exceptional presentations of celiac disease. It is important for the physicians to be aware of this association to better management of these patients.
The fisherman’s Daughter

**Background:** 15 year old girl, unwell since 9 with reduced effort tolerance. Only presented at 13 when became acutely unwell. Found to have familial hyperlipidaemia, severe AS with quadricuspid AV, coarctation of aorta, moderate carotid artery stenosis

**CAG:** shows critical stenosis at ostial RCA and ostial LM

Referred to CT for opinion
Subsequently sought cardiology advise with regards to carotid stenosis
CT aortogram
Variations in calibres of CCA and ICA
RCCA – 3-6mm
RICA – 2-5mm
LCCA – 5-7mm
LICA – 2-4mm
Diffusely disease aorta – variations in size descending aorta 10 to 13mm and abdominal aorta 6 to 9mm (Aortitis and arteritis).

**Issues:**
1. Severe AS and severe MR
2. 2 vessel disease involving ostial LM and ostial RCA – with unstable angina at presentation
3. Diffusely disease aorta – variations in size descending aorta 10 to 13mm and abdominal aorta 6 to 9mm (Aortitis and arteritis)

**Options:**
1. Bypass and valve repair/replacement
2) Angioplasty and valve repair/replacement (Hybrid procedure)
3) Angioplasty and medical therapy for the valve’s
4) Medical therapy alone

**Decided for:**
1. coronary angioplasty to ostial RCA and ostial LM
2. To treat the valve’s medically for now

**What to use:**
1. BMS
2. DES
3. Bio-resorbable scaffold
4. Cutting balloon/Scoring and DEB

**PCI RCA/IVUS**

**Techniques:**
Engaged with ‘no touch’ technique and wired down from outside.
Predilated with Emerge 2.5/15 the SC 2.5/12mm balloon.
Pre-dilated further with NC trek 3.0/12mm
Stented with Magmaris Scaffold 3.0/15
Postdilated with NC 3.25/12 at 21 atm
PCI LMS/ IVUS guided:
Engage with IMA guide, it was difficult to use other left catheter
IVUS LMS :MLA 4.0mm²
Predilated with NC Trek 4.0/12
Stented up to ostium with Magmaris scaffold 3.5/15
Upsized with NC trek 4.0/16

Outcome:
1. She was able to walk to the café post procedure for the first time since admission
2. She was seen in clinic after 3 months, NYHA II with minimal recurrent angina
3. We are still trying to source PCSK9 for her

Discussion and learning points:
1. There were limited options for this girl
2. Angioplasty was to resolve her anginal symptoms
3. Use of bio-resorbable scaffold was with good reason
4. Showcased proper BRS implantation techniques especially for ostial lesion

Follow-up:
Last seen 2019 well, Echo: EF56% Severe MR, AVA VT10.54
Coronary bifurcations account for approximately 15 to 20% of all percutaneous coronary interventions. Multiple technical strategies have been proposed for their treatment. Opting for a two-stent technique exposes immediately to more complexity, to multiply the procedural steps and to use more material, which exposes to more complications.

We received a 50-year-old patient, smoker and hypertensive, for a high-risk NSTEMI. The coronary angiography revealed a very tight ostial stenosis diagonal of large caliber on a 1.0.1 of the Medina classification LAD-diagonal bifurcation lesion. We opted for a two-stent angioplasty. The side branch was 2.75mm in diameter, the main branch was 4mm, with a 45° bifurcation angle between the two, our choice went for a TAP technique. We were in radial 6F approach and we maintained it for our angioplasty. After main branch stenting and at the time of advancing our side branch stent, we had great difficulty because of frictions with the balloon in place, making angioplasty impossible.

Instead of going into 7F, we opted for an alternative approach, that of a dual guiding catheter (ping-pong technique). We took a second guiding catheter in 6F by femoral way and let the first guiding catheter with a wire on the side branch in place. We could then advance easily our stent, we stented the side branch and performe our kissing without resistance. The angioplasty was a success without any difficulty.

The success of an angioplasty depends largely on a good analysis of the lesions and the strategy adopted. When a two-stent strategy is envisaged, a 7F guiding catheter support offers undeniably the best comfort. A dual guiding catheter could be a good alternative, when a 7 French approach is impossible for example (femoral stenosis and small radial artery).
Introduction: In certain clinical situations and for technical or patient-related reasons, the results of coronary angiography do not lead to a quantitative or qualitative diagnosis of coronary lesions or to an adequate therapeutic attitude.

Aim of the work: The authors propose to evaluate the interest of the coronary CT when the coronarography was not contributory to the therapeutic decision.

Methods: 37 patients underwent a 64-detector scan in addition to exploration of the coronary tree when the results of coronary angiography could not be conclusive. The results and the limits of the coroscanner were evaluated according to the different clinical and anatomical situations.

Results: The average age of our patients was 60.1 years, the sex ratio was 2.7 H / 1F. 59% of our patients were diabetic, 51% of our patients were hypertensive. 34 of our patients were investigated following acute coronary syndrome, 2 for dilated cardiomyopathy and one for preoperative assessment of aortic coarctation.

The indications for coroscanner were as: further study of congenital anomalies of the coronary arteries \( n = 7 \), additional study of non-opacified aorto-coronary grafts \( n = 11 \), exploration of atherosclerotic coronary lesions insufficiently evaluated at coronary angiography \( n = 16 \), unrealizable coronary catheterization \( n = 2 \), complex procedural control \( n = 2 \).

The coronary CT scan helped to provide a useful response to the diagnostic and/or therapy management in the majority of cases (35/37). Twice, it was non-contributory due to its usual limitations of high calcium score and uncontrolled tachycardia.

Conclusion: The use of the coronary CT scan for the exploration of the coronary network should not be opposed to traditional invasive coronary angiography. It must be considered as a complementary diagnostic tool opening interesting perspectives in the management of coronary pathology.
Introduction: Ischemic heart disease is the leading cause of death in the world. Acute myocardial infarction (AMI) represents so far the most serious clinical entity. Thanks to advances in pharmacological and reperfusion endeavours, a significant reduction in the in-hospital mortality has been reported worldwide.

Aim: This study sought to describe the evolution of the in-hospital mortality post AMI between 1995 and 2015 and to identify the predictors of this mortality depending on pharmacological and reperfusion endeavours.

Methods: This is a retrospective, mono-centric, descriptive and analytical study from the MIRAMI register including 1686 patients admitted for AMI in the cardiology department of the “Fattouma Bourguiba” University Hospital in Monastir, between January 1995 and December 2015.

Results: In-hospital mortality was 9.6% (162 patients). During the study, the in-hospital mortality incidence was fluctuant: 10.1% between 1995 and 2004, 5.9% between 2005 and 2009, 15.2% between 2010 and 2013, 7.4% in 2014 and 4.3% in 2015, but this variability was not significant (p= 0.133).

Conservative therapy was adopted in 41.3%. Urgent reperfusion was achieved in 58.7% of cases: 30% for thrombolysis, 24.4% for primary angioplasty (PAMI) and 4.3% for rescue angioplasty. In univariate analysis, the in-hospital mortality predictors associated to the management of AMI were: thrombolysis with Actilyse (p= 0.004), angioplasty with balloon (p< 0.001), post-angioplasty TIMI 0 or 1 flow (p< 0.001), mechanical ventilation (p< 0.001), positive inotropes/vasopressors use (p< 0.001), GP IIb/IIIa inhibitors use (p< 0.001) and unfractionated heparin use (p< 0.001). In multivariate analysis, independent predictors were: mechanical ventilation (p<0.001) and positive inotropes /vasopressors use (p<0.001).

Conclusions: The results of our study showed that the in hospital mortality has remained relatively stable despite variability over several periods with significant reduction in the last years, hence the interest of continuing this study to confirm this result.
Efficacy of Thrombolytic therapy in STEMI patients with stent thrombosis

Bouchahda N, Gammoudi A, Ben Messaoud M, Mahjoub M, Hassine M, Gamra H
Cardiology A department, Fattouma Bourguiba Hospital, Monastir, Tunisia

Background: Thrombolytic therapy to treat STEMI patients is still widely used in developing countries. Although its efficacy to open native coronary artery acute occlusion has long been demonstrated, its use in STEMI patients due to stent thrombosis is still controversial.

Methods: All 113 patients receiving Thrombolytic therapy from year 2011 to 2018 were included in this retrospective single center study.

Results: Among the STEMI patients receiving Thrombolytic therapy, stent thrombosis was observed in 9 patients (7%). Compared to the STEMI native coronary artery, rate of angiographic success was similar in the two groups; 6(66.7%) vs 56(53.8%). Comparing the two groups, only diabetes was significantly more frequent in the group with stent thrombosis (77.8% vs 33.7%; \( p = 0.01 \)).

Conclusion: Thrombolytic therapy seems to be equally efficient in reopening stent thrombosis related STEMI compared to native coronary artery STEMI.
Cardiac hydatid cyst, a very disturbing ultrasound image.

**Introduction:** In addition to being rare, cardiac hydatidosis represents a real challenge for the practitioner as the symptomatology is not specific and the prognosis characterized by a serious and unpredictable spontaneous evolution very often revealed by complications. The case presentation: Mr. G.S, 25 years old, smoker, without particular antecedents; initially hospitalized for acute coronary syndrome in front of chest pain, EKG aspect and high elevation of troponins. Trans-thoracic ultrasonography demonstrated a well-structured 08 cm heterogeneous image on the right ventricle associated with contractility disorders and a pericardial effusion of average abundance, the ejection fraction was around 35%. Coronary angiography revealed no angiographically significant lesions. A myocardial MRI performed to characterize the tissues showed a mass of intra myocardial topography located at the apical part of the right ventricle bypassing the apex of the left ventricle, complicated by myocarditis and circumferential pericardial effusion of average abundance. The standard biological assessment was without particularity even the hyper eosinophilia was absent, the hydatid serology was frankly positive confirming the diagnosis of cardiac hydatid cyst. In addition to the lesions described above, a thoracoabdominal CT revealed a peri-renal secondary site of 03 cm in stage III of GHARBI. The patient was operated under extra corporeal circulation, the macroscopic per-operative exploration allowed the extraction in addition to 02 liters of citrine yellow liquid, an hydatious cyst opened at the tip of the right ventricle with large membrane.

**Conclusion:** Imaging plays a key role in the diagnosis of cardiac hydatid cyst. Ultrasonography is not often enough and the diagnosis of this very rare pathology requires usually several complementary imaging tests. Confirmation in a second step is surgical, surgery, the only cure for this pathology with frequent and fatal complications.
Introduction: Behçet’s disease is a systemic vasculitis. It associates bipolar aphthosis, cutaneous, ocular, articular, neurological, gastrointestinal, vascular and pulmonary lesions. The cardiovascular manifestations are common, with pericardial, myocardial, valvular and coronary lesions but intra-cardiac thrombus is exceptional.

Clinical case: This is a 30-year-old patient with no notable pathological antecedents who consults for a prolonged fever evolving for 2 months with alteration of his general state. The physical examination did not reveal any clinical abnormalities. The electrocardiogram showed sinus tachycardia at 100 beats per minute. The biological assessment revealed a biological inflammatory syndrome with a C-reactive Protein level of 198 mg / l and a sedimentation rate of 147 seconds in the first hour. The blood count revealed leukocytosis at 16,800 elements / mm$^3$ predominantly neutrophils (83%). Serologies were negative. The hospital evolution was marked by the occurrence of chest pain and dyspnea. The chest X-ray showed peripheral opacity of the middle 1/3 of the right lung field. Thoracic computed tomography enabled the diagnosis of bilateral massive pulmonary embolism with multiple floating thrombi of the right cavities and a vascular obstruction index at 55%. The dosage of Proteins C and S, factor V Leiden, antithrombin III, immunological markers of systemic lupus, anti- phospholipid antibodies, anti-nuclear antibodies, anti-cardiolipin antibodies, circulating anticoagulant antibodies, anti B2GP1 antibodies was without abnormalities. Transthoracic echocardiography revealed the presence of two thrombi: one is in the right atrium, measuring 30 * 14.6 mm and one is on the interventricular septum on the right side measuring 11.7 * 8.5 mm. Transesophageal echocardiography revealed two hyperechoic masses at the roof of the right atrium measuring 21.5 * 12.5 mm and 20.6 * 15 mm respectively and confirmed the right intraventricular mass. The resumption of the interogatory revealed the notion of oral and genital aphthosis. Pathergy test was positive. The diagnosis of behcet’s disease was retained. Anti-vitamin K and corticosteroids were prescribed and the evolution was marked by clinical and ultrasound improvement.

Conclusion: Intracardiac thrombi are recognized as a classic complication of Behçet’s disease. The discovery of an intracardiac thrombus should lead to the search for the other diagnostic criteria, especially in young people.
**Introduction:** Congenital coronary artery abnormalities represent a low incidence in the general population of 1-2%. The single coronary ostium remains a very rare anatomical variety with an incidence of the order of 0.0024 to 0.044%.

**Observation:** We present the case of a 51-year-old patient without cardiovascular risk factors admitted for myocardial infarction in the inferior territory spontaneously reperfused. Coronary angiography was performed by the right femoral approach showing a single right coronary trunk, without significant lesions. Given the failed cannulation of the left coronary trunk a coroscanner made showing a single coronary ostium arising from anteroposterior sinus. The circumflex artery bypasses the postero-inferior aspect of the aortic root with a path between the aorta and the left atrium. The anterior inter-ventricular, of normal appearance, passes in front of the pulmonary artery.

**Conclusion:** Congenital coronary artery anomalies are easily detected and characterized by the spatial resolution of the CT scan. A knowledge of the impact and the prognosis of these anomalies is necessary for an optimal cardiological care.

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Introduction: Ebstein’s disease is a rare congenital heart disease (1 to 2 cases per 100,000 births), it shows tricuspid insufficiency, rhythm disorders and sometimes cyanosis. There is a great variability of clinical signs. A large number of patients tolerate this malformation quite well.

Case report: We report the case of a 39-year-old woman who had 9 abortions and as part of the etiological review Ebstein’s disease was discovered. The patient consulted the emergency department for hemoptysis and metrorrhagia. In the G10 P2 A8 gynecological history, two healthy three and six-year-old children. A angioscan did not reveal pulmonary embolism, Ebstein’s disease without other associated malformations was suspected in the Transthoracic echocardiography and confirmed by cardiac magnetic resonance imaging, an obstetrical and immunological assessment for the etiology of these repeated abortions was negative.

Conclusion: Ebstein’s disease especially in these irregular forms in an obstacle to a normal pregnancy, nevertheless a regular evaluation of the disease and these complications especially rhythmic would be the best guarantee of safety pregnancy.

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I agree that the email addresses provided may be used in sending emails related to the Cardiovascular field including our Editors’ Choice and reviewer invitations etc.
Introduction: Hypertrophic cardiomyopathy is a primitive myocardial disease that can have several clinical and anatomical aspects. Its incidence in the general population has recently been estimated between 0.02 and 0.2%. It is defined as asymmetric (predominantly septal) left ventricular (LV) hypertrophy, of genetic origin, inconsistently accompanied by obstruction to ejection. The search for obstruction is often based on continuous Doppler research of a systolic intra-ventricular LV gradient.

Cases report: We report the cases of 2 patients (2 brothers) aged 38 and 45 respectively with hypertrophic cardiomyopathy with left medio-ventricular hypertrophy and apical aneurysm. Continuous Doppler recording in both patients showed an unusual appearance: a significant obstruction flow in systole followed by an unusual diastolic flow that draws a mirror image of the classic “sword blade” aspect. The review of the literature shows that diastolic obstruction was first described in 1988 by Zoghbi in patients with MHC with apical aneurysm. This obstruction is explained by a persistent pressure gradient in diastole between the apical aneurysm, where the pressure remains high, and the basal left ventricular cavity where it is lower due to earlier relaxation. The presence of a diastolic obstruction flow in Doppler is an indirect sign to search for an apical aneurysm. The evolution is frequently complicated including the risk of sudden death by ventricular rhythm disorders and intra aneurysmal thrombus, as was the case in one of our patients.

Conclusion: Apical aneurysm exists in 2% of patients with hypertrophic cardiomyopathy. It is frequently associated with a diastolic obstruction gradient. Indications for an implantable defibrillator and anticoagulant therapy should be systematically discussed.
Introduction: Costello’s syndrome is a rare. The diagnosis is clinically suspected by the association of a cranio-facial dysmorphism, a characteristic cutaneous involvement that associates a laxa cutis or loose skin, deep palmar and plantar folds; hyperlaxity of the small joints of the hand and axillary hypotonia. Diagnostic confirmation is based on molecular biology that shows a mutation in the HRAS gene. The frequent heart attack determined prognosis. We report two observations of Costello syndrome in order to study the associated cardiac involvement and to specify the implication prognosis.

Cases report:
Ten-month-old girl, consults for depressive disorders. The examination found: facial dysmorphism and skin abnormalities suggestive of Costello’s syndrome. At the initial cardiovascular examination, she had a heart rate at 140 beats per minute, Blood Pressure= 80/40, normal cardiac auscultation. Initial echocardiography showed a heart of normal architecture. A rhythmic holter was requested showing frequent ventricular extrasystoles sometimes in doublets and frequent supraventricular extrasystoles sometimes in bursts. B blockers were prescribed. Regular clinical, ultrasound and rhythmic monitoring was recommended. At 6 months later, ETT showed non-obstructive hypertrophic cardiomyopathy with thickening of the mitral valve. The rhythmic holter revealed repetitive ventricular extrasystoles sometimes in doublets or triplets and TV bursts. Amiodarone was associated to B blockers with a good evolution in the short term.

Six-month-old girl, followed for hypothyroidism and a Costello morphotype. At the initial cardiovascular examination, she had an HR = 158 beats per minute, Blood pressure = 85/45, a normal cardiac auscultation. Echocardiography reveals a concentrically hypertrophied left ventricular (interventricular septum at 7mm) and a pericardial effusion of low abundance. Rhythmic holter had eliminated ventricular or supraventricular excitability disorders. Regular clinical, ultrasound and rhythmic monitoring were indicated. Short term evolution was good.

Conclusion: Costello syndrome is a rare syndrome. In addition to the high tumor risk, cardiac involvement determines the prognosis. As a result, it justifies regular clinical, ultrasound and rhythmic monitoring.

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I agree that the email addresses provided may be used in sending emails related to the Cardiovascular field including our Editors’ Choice and reviewer invitations etc.
Background: Atrial fibrillation (AF) is a common finding in patients with severe mitral stenosis requiring Balloon Mitral Valvotomy (BMV). Its immediate and long term prognosis remains controversial.

Objectives: We sought to evaluate the effect of AF on the immediate and long-term (23 years) outcome of patients undergoing BMV.

Methods: The immediate procedural and the long-term clinical outcome after BMV of 139 patients with AF were collected and compared with those of 381 patients in normal sinus rhythm (NSR).

Results: Patients with AF were older (43.3 vs. 29.7 years; \( p < 0.001 \)), had frequently a history of systemic embolism (9.4% vs. 1.6%, \( p < 0.001 \)) and of mitral commissurotomy (28.1% vs. 19.4%, \( p = 0.035 \)). Symptoms were similar between the two groups (NYHA > II: 48.9% vs. 49.9%, \( p = 0.648 \)). Patients with AF had more frequently a Wilkins score > 8 (51.4% vs. 30.9%, \( p < 0.001 \)), a larger left atrium (41 cm\(^2\) vs. 32 cm\(^2\), \( p = 0.001 \)) and a lower transmitral gradient (11.1 mmhg vs. 16.6 mmhg, \( p < 0.001 \)).

BMV was equally successful in the two groups (90.6% vs. 94%, \( p = 0.187 \)) but resulted in a smaller post BMV area (2 cm\(^2\) vs. 2.15 cm\(^2\), \( p = 0.012 \)) with a lower mitral valve area gain (0.9 cm\(^2\) vs. 1 cm\(^2\), \( p = 0.015 \)). BMV was not associated with a higher risk of complications (4.3% vs. 4.7%, \( p = 0.844 \)).

After a mean follow-up of 74 months, patients with AF had the same rate of restenosis (28.3% vs. 25.6%, \( p = 0.96 \)) but required more frequently a mitral valve replacement (16.3% vs. 7.7%, \( p = 0.012 \)). They also experienced higher rates of systemic embolism (3.8% vs. 0.8%, \( p = 0.018 \)) and had a lower rate of event free survival (freedom from death, restenosis and systemic embolism) (52.2% vs 68.8%, \( p = 0.047 \)).

In the group of patients in AF, predictive factors for combined adverse events including death, restenosis, and systemic embolism and mitral valve replacement are: post BMV area < 2cm\(^2\) (OR: 2.5, 95% CI [1.2; 5.18], \( p = 0.014 \)), procedural complications including severe mitral regurgitation and tamponade (OR: 3.95, 95% CI [1.4; 11.13], \( p = 0.009 \)) and NYHA ≥ II during follow up (OR: 3.46, 95% CI [2.09; 5.73], \( p < 0.001 \)).

Conclusion: Our data support the fact that patients with AF have worse immediate and long term outcomes after BMV. Post BMV area < 2cm\(^2\), procedural complications and dyspnea predict adverse events during follow up.
Background: Although the progress of antibiotic prophylactic field, infective endocarditis remains a frequent pathology. Heart failure represents his main complication.

The aim of the study: was to determine the various characteristics of patients suffering from heart failure complicated by infective endocarditis and to define its impact on the mortality.

Patients and methods: From the infective endocarditis register of our service comparing 342 patients and responding to criteria of DURAK DUKE University which collected retrospectively, we included patients with heart failure on admission, namely dyspnea greater or equal to NYHA stage II. A total of 85 patients were enrolled in the heart failure (35.2% of register).

Results: Heart failure complicating infective endocarditis of native valve had occurred in 96 cases (74.2%). The microbiological investigation was positive in 65.5% of cases with a predominance of staphylococcus. The using of surgery was necessary in 71.8% of cases. Hemodynamic instability was the main indication.

The total mortality in our registry was 16.5%, but higher in the group with heart failure (24.2% vs 12.7%; \( p = 0.003 \)). In the multivariate analysis we found, as predictive factors for mortality of infective endocarditis complicated by heart failure group, the significant influence of anemia (OR= 3.1; IC 95% [1.6-12.6]; \( p = 0.01 \)), infection by staphylococcus aureus (OR= 5.2 ; IC 95% [2.4-17.8]; \( p = 0.02 \)) and surgery delay (OR=3.1; IC 95% [1.1- 13.7]; \( p=0.01 \)).

Conclusion: Heart failure is the most frequent complication of infectious endocarditis, and its first cause of death.
Background: Patients with renal insufficiency experience worse prognosis after STEMI. Current guidelines do not clearly draw specific strategies for renal dysfunction (RD) patients, and most clinical trials exclude them from the study population.

Aims: to compare primary PCI (PPCI) and thrombolysis results as well as in-hospital mortality after successful reperfusion between patients with or without RD.

Methods: From January 1995 to October 2016, 1588 patients admitted for STEMI were enrolled in our registry. Two reperfusion groups were identified: PPCI (315 patients) and thrombolysis (379 patients). Patients who underwent rescue PCI were excluded. Due to lacking creatinin clearance data, we used a serum creatinin level > 130 µmol/l to define RD patients. We compared the group of RD patients (RD+) and normal renal function patients (RD). Our main endpoints were: (1) The success of reperfusion (TIMI III flow restoration with <20% residual stenosis after PPCI, pain relief with ST regression >50% 60 min after thrombolysis ) and (2) the in-hospital mortality.

Results: Ninety patients (13%) had RD, 50% of which underwent PPCI, and 50% received thrombolytics. Baseline characteristics were similar between the two reperfusion groups.

In the PPCI group, although TIMI flow was similar before angioplasty (\( p=0.82 \)), TIMI III flow restoration was significantly lower in the RD+ group (78.6% vs 91.8%, \( p=0.013 \)). Suboptimal result was also higher in the RD+ group (13.6% vs 2.7%, \( p<0.001 \)), but ST regression after TIMI III achievement was similar in the 2 groups (\( p=0.43 \)).

In the thrombolysis group, successful reperfusion was also significantly lower when RD exists (58% vs 74%, \( p=0.03 \)), but RD was not an independent predictor of thrombolysis failure. RD was an independent mortality predictor either after PPCI or thrombolysis (respectively \( p=0.014 \), OR= 4.39 and \( p=0.006 \), OR=4.93).

After successful reperfusion, in-hospital mortality was higher among RD+ patients in the PPCI group (33.3% vs 4.3%, \( p<0.001 \)), whereas it was similar after successful thrombolysis (2.6% vs 0%, \( p=0.42 \)).

Conclusion: RD reduces PPCI success. Although RD was an independent mortality predictor regardless of the reperfusion strategy, prognosis was worse in RD group only after successful PPCI, but not after successful Streptokinase thrombolysis. Patients with RD experience poorer outcome only when mechanically reperfused, whereas patients with normal renal function do not.
**Introduction:** Right ventricular (RV) infarction is a serious and life threatening condition which mainly complicates an inferior wall myocardial infarction (MI). In the literature, data for predictive factors of mortality in this setting remains scarce.

**Aim:** to study predictive factors of intrahospital mortality in patients with RV infarction

**Methods and results:** Data was collected from the MIRAMI registry which is a monocenter registry including all patients with AMI admitted in cardiology A department in Monastir University Hospital between January 1995 and March 2013. 1483 patients were enrolled in our registry. RV infarction was diagnosed in 160 (10.7%) patients, always complicating an inferior wall MI. 37 (23.1%) patients presented with right sided heart failure while the remaining patients presented with isolated features of RV involvement on the ECG with ST elevation in the right leads. Intrahospital death occurred in 20 patients (12.5%) and was significantly higher in patients with RV heart failure ($p=0.02$).

Among all deaths included in our registry, RV infarction was responsible for 14.5%. The reperfusion strategy was Thrombolysis in 48 patients (30%), angioplasty in 62 patients (38.8%), a combined approach in 10 cases (6.3%) and conservative treatment in 40 cases (25%). There was no difference in mortality among all strategies ($p: 0.556$). In patients who had angioplasty, post procedural TIMI flow 0 or 1 was associated with a higher mortality ($p<0.001$). In a multivariate analysis, factors found to predict intrahospital mortality were: renal impairment defined as creatinin levels $>130\mu\text{mol/l}$ (OR: 8.22; 95% CI [1.33-50.9]; $p: 0.023$), triple vessel disease (OR: 7.09; 95% CI [1.738-28.93]; $p: 0.006$) and left ventricular failure with KILLIP $>1$ (OR: 0.09; CI [1.58-10.58]; $p:0.004$)

**Conclusion:** Our data support the fact that several factors may predict intrahospital mortality after RV myocardial infarction among which renal impairment, the extent of coronary artery disease and left ventricular heart failure are the most powerful predictors.

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**Introduction:** A case of iatrogenic coronary dissection with extensive propagation into the ascending aorta during angioplasty of the right coronary artery is presented.

**Case presentation:** We report the case of a 38-years-old patient with STEMI admitted to our cath-lab for rescue PCI, the coronary angiography showed a tight stenosis at the right coronary artery, we decided to treat by direct stenting. The result was good, but the patient developed severe chest pain, deep precordial ST depressions on telemetry, bradycardia and hypotension; and the surprise was an extensive aortic dissection, fortunately we managed it.

**Conclusion:** Iatrogenic coronary artery dissection is a potentially life-threatening complication of cardiovascular interventions; we must choose the good strategy to treat it.
Introduction: The optimal timing of coronary intervention in patients with non-ST-segment elevation acute coronary syndromes (NSTE-ACSs) is a matter of debate.

Purpose: We proposed through this work to study the optimal time to coronary angiography in patients admitted for acute coronary syndrome without ST-segment elevation in the Tunisian context and its prognostic impact on in-hospital mortality.

Methods: It is about a single-center observational study from MIRACOS registry that included 407 patients admitted for acute coronary syndrome without ST-segment elevation from January 2007 until December 2012. We were interested to find general characteristics, clinical presentation at admission and the time to coronary angiography, revascularization, mortality and in-hospital complications.

Results: A total of 407 patients were included in our study. The average age of our patients was 62.85 years ± 11.37 years. Nearly half of our patients (49.5%) were considered at high cardiovascular risk. The average to coronary angiography was 7.09 days. Patients who underwent early coronary angiography were significantly younger (p = 0.01), had a lower incidence of diabetes (p = 0.01), left heart failure (p = 0.0001) and electrical changes suggestive of ischemia (p = 0.0009). In addition, they had an in hospital stay significantly shorter (p = 0.0001). Patients who have undergone an invasive strategy had significantly lower levels of creatinine (p < 0.0001) and significantly lower GRACE score (p = 0.0001). The absence of renal failure, the absence of left ventricular failure, a low GRACE score and the absence of anemia were independent predictors of use of an invasive strategy. The overall mortality among patients included in the study was 2.9%. High heart rate (p = 0.04), presence of heart failure (p = 0.01), a high serum creatinine (p < 0.001) and GRACE score (p < 0.0001) were predictors of mortality in ACS ST (-) in our population. All cases of death were observed in the medically treated or the delayed coronary angiography group (0% vs 2.9%, p = 0.01). The group that underwent early coronary angiography had a statistically significant reduction in MACE (3.4% vs. 15.7%, p = 0.04).

Conclusion: Despite the fact that our work has showed that invasive strategy is associated with a better prognosis in ACS ST (-) patients, the use of this strategy remains insufficient.
Background: PTCA (percutaneous coronary angioplasty) balloons are an integral part of the interventional cardiology armamentarium. However, the shaft of PTCA balloons uncommonly may break during the procedure due to faulty manufacturing or factors related to the coronary lesion and handling by the operator.

Case presentation: A 68 year old male with history of smoking, hypertension and dyslipidemia who initially presented to our institute with NSTE-ACS (Non ST-segment elevation acute coronary syndrome) and had PCI (percutaneous coronary angioplasty) to his left circumflex artery, was then scheduled for elective outpatient PCI to concomitant disease of proximal and distal RCA (right coronary artery) four weeks later.

Femoral access, 6 F JR 4 guiding catheter, regular workhorse PTCA wire were used to deliver a 2.75 x 24 mm drug-eluting stent to proximal RCA. A 3.0 x 12 mm NC (non-compliant) PTCA balloon was used to optimize stent apposition. During inflation PTCA shaft was broken, with the balloon partially inflated and distal half of the shaft within the guiding catheter and the proximal portion with the hub was attached to endeflator and was removed. Flow to distal RCA was compromised due to partially inflated balloon. Another workhorse PTCA wire was used to cross to distal RCA and both wires were braided and the whole system was safely removed via the femoral sheath.

Conclusion: Breakage of PTCA balloon shafts are uncommon. Several techniques have been used to retrieve broken shaft including coronary bypass surgery, snaring, and simple balloon inflation within the guiding catheter. Another described technique which we used in our case involves a second PCI wire with braiding of both wires and whole system removal with broken distal segment of PTCA shaft within the guiding catheter.
Introduction: Neoplastic pericarditis is a rare etiology of acute pericarditis. Pericardial involvement is most often secondary occurring by contiguity or lymphatic system. Neoplastic pericarditis may be indicative of underlying neoplasia and its prognosis is identical to that of the primary tumor. We report the case of a patient who was admitted for acute pericarditis revealing an invasive thymoma.

Case-report: This is a 37-year-old patient presenting epigastralgia, vomiting and dyspnea. At the initial cardiovascular examination, he had a heart rate at 140 beats per minute, blood pressure = 130/85 mmHg, cardiac auscultation reveals muffled heart sounds, no pericardial friction and he has signs of right heart failure. He was afebrile. At the electrocardiogram: sinus tachycardia at 140 b / min; low voltage; flat T wave in antero-septal and inferior. The chest X-ray showed cardiomegaly; rectitude of the cardiac edges; rounded, parahiliary opacities suggestive of mediastinal lymphadenopathy; right pleurisy of low abundance. The echocardiography showed unexploded cardiac cavities; no valvulopathy, circumferential pericardial effusion of great abundance 23 mm posterior, systolic collapse of the right ventricular and significant respiratory variability of tricuspid and mitral flow.

The effusion is homogeneous but the pericardium is thickened and hyperechoic. The patient underwent a pericardial biopsy puncture which brought back one and a half liters of blood-thinning fluid, Rivalta +, sterile with non-specific pericardial fibrous and inflammatory changes. The thoraco-abdominal CT scan showed a large cast of right mediastino-hilar lymphadenopathy associated with a very extensive right-sided pleural lesion. A lymphomatous origin was most likely. A mini thoracotomy was performed, objectifying a mediastinal mass with right pulmonary invasion whose biopsy concluded that the thymoma was invasive. This patient is currently proposed for chemotherapy. Radiation therapy and / or surgery will be provided depending on the response to chemotherapy.

Conclusion: Neoplastic pericarditis can be revealed by an acute pericarditis, especially if associated to signs of gravity. The diagnosis can be provided by the biopsy puncture of the pericardium but also and especially by the meticulous search of the primary tumor. The prognosis is often bad except for lymphoma and thymoma, a significant improvement in prognosis can be obtained through radiochemotherapy.
Tamponade revealing Still’s disease in children: A case report

Introduction: Still’s disease is an inflammatory disease characterized by hectic fever, polyarthritis and an evanescent rash. The manifestations are polymorphous. Among the many manifestations of the disease, pericarditis is present in 40% of cases. The cases of tamponade are exceptional.

Observation: We report the case of a 14-year-old boy who was transferred to our department for infectious endocarditis (IE) with aortic localization complicated by septic shock and pericardial tamponade. The child has already been put on vasopressive drugs; then percutaneous pericardial puncture had evacuated 400 ml of predominantly polynuclear neutrophilic and negative culture serumematic fluid. In our department, the hemodynamic state was stable, the vasopressive drugs were stopped. The control ETT showed an unexplained left ventricle of normal kinetics, moderately tight aortic stenosis, grade 1 aortic insufficiency, and minimal pericardial detachment. A new etiological investigation was initiated in the face of the discrepancy between the diagnosis of IE and the clinico-biological data: the general condition was well preserved, with an acute fever quantified at 40°C for 5 days, resistant to antibiotic treatment, arthritis of the right ankle, presence of bilateral pleural effusion and hepatosplenomegaly. In biology, he had a C-reactive Protein level of of 300 mg / l, leukocytosis at 14,000 / mm³ predominantly neutrophilic, an anemia, a sedimentation rate of 100 seconds at the first hour and negative blood cultures. In addition, antinuclear antibodies and rheumatoid factor were negative. Thus the diagnosis of Still’s disease was retained according to the criteria of Yamagauchi et al. The child was placed on oral corticosteroid therapy at a dose of 1 mg / kg / day with good clinical and biological progress.

Conclusion: Pericardial tamponade may reveal connective tissue disease. The presence of a cardiac lesion complicates the distinction between connectivity and IE and a broader etiological inquiry in order to gather the discriminative arguments is essential.
The management of ST-segment elevation myocardial infarction (STEMI) exposes to thromboembolic complications. When an embolization involves the circumflex artery while the LAD is the culprit lesion, the consequences are dramatic and often fatal. We have been exposed to this complication in three patients.

The first patient was a young man with acute occlusion of the ostial left anterior descending artery (LAD). Following a thromboaspiration, a part of the thrombus rushed to the circumflex (CX) artery, the consequence was fatal.

The second patient presented also acute occlusion of the ostial LAD. Embolization of part of the thrombus to the CX occurred after the use of a balloon for predilatation. The patient didn’t survive to this complication.

For the last case, it was an acute occlusion of a proximal aneurysmal LAD, the embolization to the CX was done after thromboaspiration maneuver, we could aspirate the thrombus from the CX during a cardiac massage and put a stent the LAD, this allowed to recover the patient after a cardiac arrest and ventricular fibrillations.

Simultaneous LAD and CX thrombosis deprives abruptly the left ventricle of approximately 80% of its blood supply. To better prevent this situation and its harmful consequences, we recommend the use of anti GPIIbIIIa for high thrombotic lesions, to not hesitate to put a wire on the circumflex when ostial localization, avoid balloon predilatation especially in very proximal localization, consider the large diameter thromboaspiration catheter for large arteries. A fast restoration of a satisfactory flow being the sole guarantor of a favorable evolution.
Introduction: Cardiac involvement in systemic lupus erythematosus (SLE) is well known. It includes pericarditis, myocarditis, valvulopathy, ischemic coronary artery disease, conduction disorders and arrhythmias. Clinically severe myocarditis is unusual during SLE.

Observation: We describe the case of a 35-year-old patient without cardiovascular risk factors, followed since 2007 for SEL, diagnosed in the presence of 7 diagnostic criteria of the “American College of Rheumatology”, put on steroids and immunosuppressant, and stopped by the patient after a year of treatment.

The patient develops progressively, 3 years after the diagnosis of lupus, a dyspnea of effort, quickly becoming a dyspnea of rest, associated with thoracic pain.

The examination found a patient with cardiogenic shock requiring vasoactive drugs and high-dose of diuretics.

In biology, we note a rise in troponins at 47 μg /L (N <0) CPK 290 IU /L and renal failure with creatinine at 250 μmol /L or a clearance of 28 ml / min. Echocardiography found a dilated left ventricular with altered systolic function (35%) with global hypokinesia. a relaxation disorder and a PAH at 38 mmHg associated with a pericardial effusion (of moderate non-compressive abundance at 10 mm).

The patient was put on a corticosteroid bolus in combination with the conventional treatment of heart failure involving oxygen therapy and diuretic in high doses.

Immunosuppressive therapy has been associated with corticosteroid treatment in the presence of membrano-proliferative glomerulonephritis.

The evolution was marked by the clear improvement of the general state, the respiratory state and the renal function.

Conclusion: Severe myocardial involvement is unusual during SLE; it is most often associated with atherosclerosis, old blood pressure or corticosteroid therapy.

But sometimes, it can appeared early and be life-threatening.

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Background: Longitudinal stent compression (LSC) is a rare complication but more prevalent with evolution of technique and coronary stent design, notably the new drug eluting stents (DES) generation. This occurs when there is a need to cross a previously deployed stent with a second device causing an accidentally shortening of the stent. While some situations were identified as risk factors, we reported two case reports of LSC in a routinely daily practice.

Case 1: A 48-year-old woman with a history of hypertension and type 2 diabetes was admitted for a high risk non persistent ST elevation myocardial infarction (NSTEMI). Coronary angiography was done and revealed a thrombotic stenosis of mild left anterior descending artery (LAD). Percutaneous coronary intervention (PCI) was performed with a Promus Element (Boston Scientific, Natick, MA, USA) everolimus eluting stent 2.5*38mm inflated at 16 atmospheres (ATM). The attempt to cross the stent with 3.0*21mm non compliant (NC) balloon Sprinter® (Medtronic, INC., MN, USA) for post dilatation of the proximal part provoked a LSC. The complication was solved with up sizing balloons 1.5*12mm, 2.5*12mm semi compliant Sprinter® balloons and than 3.0*21 NC balloon obtaining a good final result.

Case 2: A 57-year-old chronic smoker male was admitted for primary PCI of an anterior STEMI. Coronary angiography revealed a thrombotic occlusion on the bifurcation mild LAD-1st diagonal with TIMI 0 flow on LAD. Provisional strategy was done with Promus Element 2.75*32mm inflated at 18 ATM. Positioning of the 3.5*9mm NC balloon for a proximal optimization technique (POT) without encountering any particular difficulty or resistance showed an unexpected LSC at the StentViz® (GE technology) pictures. POT was successfully done with a good final result.

Conclusion: Unless the LSC was described in certain at risk situations, our cases highlight the occurrence of this complication in non-at risk procedures involving the use of Element stent as reported in numerous studies and case reports. Therefore, increase awareness of LSC and proper identification and management is mandatory with the aforementioned stent.

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CONTRIBUTION OF ECHOCARDIOGRAPHY IN THE DIAGNOSIS OF CONSTRUCTIVE CHRONIC PERICARDITIS.

ABOUT NINE CASES
Fennira sana, Echaieb wided, Ben Mrad imtiniene, Kammoun sofiene, Zairi ihsen, Ben Moussa fathia, Mzoughi khadija, kraiem sondos
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Background: Pericardial constrictions are difficult to diagnose, especially non-calcified fibrous forms, which have become more frequent with the decline of rigid and calcified tuberculous forms.

Goal: The aim of our work is to evaluate the contribution of the different methods of exploration notably Doppler echocardiography in the diagnosis of pericardial constrictions.

Methods: We collected between January 1993 and April 2010 nine male patients with pericardial constriction. A complete clinical examination, electrocardiogram, chest x-ray and echocardiography were performed to all these patients. Seven of them benefited of cardiac catheterization.

Results: The average age was 30 years with extremes of 14 years and 52 years. Only 43% of patients had a history of acute pericarditis. Doppler echocardiography showed pericardial thickening in 89% of cases, a W aspect of hepatic venous flow and significant respiratory changes in 89%. The speed of displacement of the mitral annulus (Ea) and the velocity of propagation of the left ventricular filling flow (Vp) were > 9 cm/s and > 45 cm/s, respectively. The diagnosis of pericardial constriction was confirmed by a hemodynamic study in seven cases. In two cases, regression of signs of constriction was obtained under medical treatment alone after respectively 3 weeks and 6 months. Five patients underwent a pericardectomy, the eighth still refuses surgery and the intervention is planned for the ninth.

Conclusion: Doppler echocardiography has a considerable benefit in the diagnosis of pericardial constrictions, and because of its accessibility it allows a diagnosis and an early treatment, guaranteeing a better prognosis.

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Background: The incidence of endocarditis related to pacemakers is increasing, while the diagnosis and management remain controversial. The objective of this study was to evaluate the clinical features and management of endocarditis after implantation of pacemakers (PM).

Methods: This was a prospective study which included all patients diagnosed with infective endocarditis (IE) and hospitalized in the cardiology department of Monastir hospital, Tunisia, between 1983 and 2017. We included patients who were diagnosed with definite infective endocarditis based on the modified Ducke criteria.

Results: Three hundred forty patients were included in this study. The mean age of the patients was 37 ± 17.92 years; 56.4% men were and 33% had rheumatic heart disease. 15 patients had PM. Fever (78%), asthenia (65%), and local symptoms (35%) were common. Positive cultures were obtained in 9 cases (Staphylococcus 89%). 2 patients (13%) had pulmonary embolism. Vegetations (mean size 15.2 ± 8 mm, range 5 to 35 mm) were found in 13 cases (90%), with transthoracic echocardiography in 6 cases (43%), and transesophageal echocardiography (TEE) in 12 cases. Devices were removed surgically (n = 9) or percutaneously (n = 6). In the surgical group, vegetations were larger (17.9 ± 7 mm vs 13.2 ± 7 mm, p = 0.01). After removal, 10 patients (70%) had a new PM. Mortality factors (3 deaths – follow up 3.4 ± 2 years) were the number of vegetations and absence of extraction of the device (p < 0.02). Clinical features and management of the 9 patients with early onset endocarditis (within 1 year after implantation) did not differ from those with late onset.

Conclusions: PM endocarditis was essentially staphylococcal. TEE was required for the diagnosis of vegetations. Complete removal of the device is required and associated with a favorable outcome.
Background: The prevalence and the severity of atherosclerotic coronary artery disease increase with age. Thus, the elderly have the highest incidence of cardiovascular disease and frequently present with acute coronary syndrome. The aim of this study was to determine the clinical and angiographic profile of elderly patients with acute myocardial infarction (AMI).

Materials and methods: The study included retrospectively 352 patients with AMI admitted between January 2000 and March 2017 in the intensive cardiac care unit of the cardiology B department of Fattouma Bourguiba University Hospital treated with primary percutaneous coronary intervention (PCI). The elderly was defined by patients older than 75 years.

Results: Among the 352 patients admitted in the acute phase of ST-elevation myocardial infarction (STEMI), 11.1% were older than 75 years. Sixty-nine point two percent were male. These patients had more co-morbidities: essential hypertension (48.7% vs 27.2%; \( p = 0.005 \)), diabetes mellitus (34.5% vs 17.9%; \( p = 0.038 \)), anemia (53.8% vs 35.8%; \( p = 0.028 \)) and renal failure (46.7% vs 11.5%; \( p < 0.0001 \)). Smoking and history of coronary disease were less prevalent in the elderly (25.6% vs 60.1%; \( p < 0.0001 \), 10.3% vs 16.8%; \( p = 0.012 \)) respectively. They had more likely to present left bundle branch block (14.4% vs 4.2%; \( p = 0.027 \)). Angiographically, 30% of elderly patients had three vessel disease (vs 18.2%; \( p = 0.02 \)) and 82.1% had initial TIMI 0 flow (vs 70.3%; \( p = 0.04 \)). No reflow and post PCI residual intracoronary thrombus were more likely to occur in this group (15.8% vs 9.3%; \( p = 0.03 \), 17.9% vs 11.1%; \( p = 0.024 \) respectively). They were also more likely to have complications: left heart failure (29.7% vs 13.9%; \( p = 0.042 \)) and arrhythmia especially atrio-ventricular blocks (7.7% vs 1.9%; \( p = 0.014 \)). They had a higher rate of in-hospital mortality (17.9% vs 11.2%; \( p = 0.01 \)).

Conclusion: AMI is one of the most common causes of mortality and morbidity among the elderly patients. Our study indicate significant age-associated differences in clinical and angiographic characteristics in elderly patients with AMI.

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Background: The presence of residual intracoronary thrombus after primary percutaneous coronary intervention (PCI) has poor clinical and angiographic outcomes. The aim of this study was to assess the frequency of residual intracoronary thrombus after PCI for acute myocardial infarction (AMI), its determinants and clinical impact.

Methods and materials: We retrospectively included 352 patients with AMI who underwent primary PCI, enrolled between January 2000 and March 2017 in Cardiology B department of Fattouma Bourguiba University hospital. We compared clinical and angiographic features of patients who had post PCI angiography visible intracoronary thrombus with those who did not.

Results: Residual intracoronary thrombus after primary PCI for AMI was present in 54 (15.3%) patients. It was more likely to be present in elderly patients (>75 years) (20% vs 14.8%, \(p=0.025\)). There was not significant difference between male and female (15.2% vs 16.1%, \(p=0.5\)). Patients who had residual intracoronary thrombus following primary PCI had more comorbidities: essential hypertension (20.2% vs 13.3%, \(p=0.032\)), diabetes mellitus (17.4% vs 14.3%, \(p=0.2\) (NS)), history of coronary disease (25.6% vs 13.6%, \(p=0.02\)) and renal failure (26.8% vs 13%, \(p=0.023\)). They were more likely to be smokers (17.3% vs 12.8%, \(p=0.01\)) and anemic (22.6% vs 11%, \(p=0.03\)).

Angiographically, residual thrombus was present in 18.5% of patients when the initial thrombotic charge was low to moderate and in 33.9% when it was high (\(p<0.0001\)). These patients had higher rate of no reflow (47.2% vs 6.3%, \(p<0.0001\)). During the index hospitalization, they were more likely to die (31.5% vs 8.4%, \(p<0.0001\)). In multivariate analysis, post PCI residual thrombus was not a significant predictor of in hospital death.

Conclusion: Intracoronary thrombus after primary PCI is associated with worse cardiovascular outcomes. However, differences in outcomes between patients with and without residual thrombus are related to baseline clinical differences rather than thrombus per se.

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I agree that the email addresses provided may be used in sending emails related to the Cardiovascular field including our Editors’ Choice and reviewer invitations etc.
Background: The use of illicit drugs is constantly increasing. The substances used are mainly cocaine and its derivatives, amphetamines, ecstasy, cannabis and heroin. The risk of heart attack is increased by a factor of 24 in a healthy coronary person for 60 minutes after taking cocaine, regardless of the amount, frequency and route of administration.

Patients concerns: We report the case of 3 young chronic cannabis users for the first two cases and ecstasy for the third case hospitalized in our cardiology department for the management of acute coronary syndrome. The average age of our patients was 31 +/- 0.5 years old. All our patients did not have cardiovascular risk factors other than smoking. In front of anginal chest pain, electrical changes on the electrocardiogram and troponin elevation, a coronarography was done in the three cases and showed the presence of a thrombus in the left anterior descending artery in the first two cases and normal coronary angiography in the third case.

Lessons: The role of Ecstasy and cannabis on coronary vessels is not well documented. Few cases of myocardial infarction directly linked to the use of these substances have been reported in the medical literature. Apart from the fact that myocardial infarction occurs in a young patient (under 40 years of age), male, smoking, without any other cardiovascular risk factor, and regular consumer of an illegal substance, the semiology is identical.

Conclusion: the effects of the consumption of illicit drugs concern the macro as much as the micro circulation, both arteries and veins. The two main culprits are cocaine and cannabis. The mechanisms are varied and often intricate given the poly addiction and the associated smoking or alcoholism.

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**Introduction:** Intra-hospital mortality during a STEMI, dropped considerably in recent years, in part, thanks to primary angioplasty. Indeed, she passed from 10.7% for thrombolysis to less than 6% for primary angioplasty.

**Methods:** This is a retrospective study of 500 patients collected within the cardiology department of the “Mongi Slim” hospital in La Marsa, over a period of 13 years (1 January 2006, to 31 January 2019), admitted to the hospital during the acute phase of STEMI and all treated with primary angioplasty.

**Results:** The use of invasive treatment or percutaneous coronary intervention in women is less frequent than in men. Compared to men, women are often more elderly, diabetic and have more left ventricular failure. In many studies, the female sex is correlated with an excess mortality, as was the case in our series.

In our study, intra-hospital mortality was 9.2% for men and 24.2% for women. This difference is statistically significant ($p < 0.0001$) with an OR of 3.1.

Cardiovascular risk factors such as diabetes, high blood pressure and high cholesterol were significantly more frequent in women. Indeed, 63.6% of women were diabetic, compared to 35.9% of men ($p < 0.001$). High blood pressure was also significantly more prevalent among women (65.7% versus 32.7% with $p < 0.001$). Dyslipidemia was as well found more frequently in women (42.4% versus 20.1% in men, $p < 0.05$). Chronic renal failure was more common in women compared to men (8.1% vs 3%) without reaching the threshold of significance ($p > 0.05$).

We also noted a significant delay in the consultation time after the onset of symptoms with women. Only 25.3% of female patients consulted in the first 3 hours against 43.4% of men ($p < 0.001$). The Intra-hospital mortality among women undergoing primary angioplasty was significantly higher compared to men (24.2% versus 9.2% $p < 0.0001$, OR 3.1). But in multivariate analysis, the female sex did not match as an independent predictor of intra-hospital mortality.

**Conclusion:** Women undergoing primary angioplasty for AMI have a significantly higher in-hospital mortality; our result is comparable to that reported in the literature. This can be explained by a heavier comorbidity, a longer presentation time and a delay in admission to the catheterization room in the female population.

Some research has hypothesized a different metabolic and inflammatory response to acute ischemia according to gender, but this theory is not yet well supported.

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Carbon Monoxide (CO) intoxications are still frequent in our country. It can lead to high morbidity and mortality involving multiple organ systems: central nervous system lung, heart... and it can be fatal. Non ST elevation Myocardial Infarction has been reported in moderate to severe CO poisoning. However, ST elevation Myocardial Infarction with clear coronaries due to CO poisoning in young patients with no risk factors appears to be rare.

We hereby report a case of an ST elevation Myocardial Infarction due to Carbon Monoxide poisoning. It is about a 35 year-old woman with no cardiovascular risk factors that was admitted with an ST elevation myocardial Infarction as a result of CO intoxication.

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**Introduction:** The left auricle is the elective site of thrombi formation in non-valvular atrial fibrillation. Thus, it constitutes the anatomical substratum of its various thromboembolic complications. Its study by two-dimensional transesophageal echocardiography, which has been used as a reference imaging method, encounters several types of difficulties. The relatively recent advent of the three-dimensional mode in real time has expanded the technical arsenal and increased diagnostic and treatment contribution of echocardiography. This study aims to make a morphological and functional study of the left auricle, identify its anatomical variants, and specify the contribution of real time 3D transesophageal echocardiography.

**Methods:** A retrospective descriptive study of a heterogeneous population of 70 patients from the Mongi Slim Hospital’s cardiology department, who undergo transesophageal echocardiography in both two-dimensional and three-dimensional modes in real time, regardless of the medical indication. We have identified the clinical and ultrasound characteristics related to the morphology and activity of the left auricle and their implications for intra-auricular thrombogenesis.

**Results:** The mean volume of the left auricles analysed was 3.83 +/- 3.79 ml and the mean left ventricular function was 53%.

- The majority of left auricles had ostia rather ellipsoids than circular (mean eccentricity index: 1.26).
- Patients, who were in atrial fibrillation at the time of ultrasound examination, had more dilated left auricles characterized by a lower ejection fraction and a saw-tooth pulsed Doppler flow with very low average filling and emptying velocities (respectively 36 cm/s and 35 cm/s).

In two-dimensional transesophageal echocardiography, we showed that the dimensions of the left auricle can be deduced particularly from two impacts: 45° and 135°.

In addition, the three-dimensional mode allowed us to study the auricle more precisely, to identify its various anatomical variants, to differentiate more easily trabeculae thrombi and calculate the ejection fraction in volume.

**Conclusion:** Transesophageal echocardiography, through its two modes: two-dimensional and three-dimensional mode, allows a precise and reliable anatomical and functional study of left auricle and thus provides valuable information for understanding and prevention of cardiac thromboembolic events. The three-dimensional mode, improves diagnostic and therapeutic capabilities.
**Introduction:** Mitral stenosis is the most common rheumatic valve disease often revealed or aggravated in women during pregnancy. Percutaneous mitral commissurotomy (PMC) is the treatment of choice. However, this radiating technique is not without risks for both the patient and the fetus. In this study we aimed to describe the demographic, clinical and echocardiographic characteristics of patients treated with PMC during pregnancy as well as to assess the immediate and medium-term outcomes of these procedures.

**Methods:** We performed a monocentric retrospective observational study conducted in the cardiology department of Mongi Slim La Marsa Hospital over a 13-year period from 2005 to 2017.

**Results:** We selected 14 cases of PMC. Mean patients age was 32 ± 2.7 years with extremes of 27 and 36 years. The mean age of gestation was 30.2 ± 3.8 weeks of amenorrhea when performing the PMC. Under optimal medical treatment, the majority of patients (10) were symptomatic with NYHA class II dyspnea while two were with acute pulmonary edema.

The Wilkins score according to the anatomic state of the mitral valve was ≤ 8 in 10 patients. Successful PMC was obtained in 13 patients with a mitral surface > 1.5 cm². A significant increase in mitral area from 0.88 ± 0.19 to 1.61 ± 0.23 cm² and a significant decrease in systolic pulmonary artery pressure from 61.7 ± 23.5 to 44.8 ± 16.2 mmHg (p <0.01) were recorded. No cases of complication (moderate or severe mitral regurgitation, tamponade, embolism or death) were noted in the 14 procedures. All pregnancies were completed and vaginal delivery was the rule in all parturients except for the one with a PMC failure in which caesarean section was indicated.

Regarding neonates, two cases of neonatal hypotrophy were observed. These results were perfectly comparable to those reported in the literature.

**Conclusion:** PMC has a low maternal and fetal risk and is therefore the treatment of choice for severe mitral stenosis of the pregnant woman with good clinical and echocardiographic results in the short and medium term.

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Purpose: Prosthetic valve thrombosis is a life-threatening disease. It warrants rapid diagnosis. However, establishing this diagnosis might be difficult for two reasons:
- First, clinically the onset of symptoms is gradual or sudden, in some cases insidious.
- Second, echocardiographically, identifying a thrombus on valve prosthesis is exposed to some difficulties such as:
  1. Artefacts associated with the prosthesis,
  2. Mismatch prosthesis-patient and transprothetic mean gradient can be within the normal range even in some cases of obstructive PMVT.
  3. Great likeness between thrombus, vegetation and pannus.

The treatment strategies is controversial. The operative mortality associated with repeat heart valve surgery is higher than for initial valve operation. The purpose of our study is to determine the role of TEE in the rapidity, the accuracy of diagnosis and the choice of therapeutic modalities in PMVT.

Methods: The echocardiographic database between August 1992 and January 2006 was screened to identify all patients with PMVT, thus clinical data and videotapes or digitally stored images of transthoracic echocardiography (TTE) and transesophageal echocardiography (TEE) were retrospectively reviewed for thirty seven consecutive patients: 7 males (19%) and 30 females (81%), 6 in sinus rhythm (16%), 31 with atrial fibrillation (84%), 2 with single-tilting disk (6%) and 16 with double-tilting disk (43%).

We divided the patients in two groups:
- Groupe A: 20 patients with obstructive PMVT.
- Groupe B: 17 patients with nonobstructive PMVT.

Results: Groupe A: patients with obstructive PMVT (20):
- 8 deaths before any treatment 4 treated with heparin and 11 treated surgically
- Anticoagulation therapy
  2 deaths 2 successes 3 deaths 8 successes

Groupe B: patients with nonobstructive PMVT (17), 16 treated with heparin and anticoagulation therapy 1 treated surgically, 10 successes 1 death 5 failures 6 successes.

Risk factors for PMVT: atrial fibrillation (31), dilated left atrium (30), inadequate anticoagulation therapy (21), pragnancy (5) and previous thromboembolic events (5).

Conclusion: TEE is the cornerstone in the diagnosis and treatment strategy of patients with obstruction.
Minority of patients presenting to the emergency department with chest pain have acute coronary syndromes and it is still challenging to identify the patients who may be safely discharged and determining whether further testing is needed. From the prehospital care setting to disposition and follow-up, this systematic review addresses the fundamentals of the emergency department evaluation of patients determined to be at low risk for acute coronary syndromes or adverse outcomes. By using a combination of the clinical history, physical examination, ECG, biomarkers, and validated clinical risk scores, many patients who present to the ED with chest pain can be efficiently and safely identified the risk of the patient with chest pain. New technologies, such as high-sensitivity troponin assays and advanced imaging techniques, are also presented.
PROGNOSIS IN THE HOSPITAL PHASE OF MYOCARDIAL INFARCTION COMPLICATED BY AN ATRIOVENTRICULAR BLOCK. RETROSPECTIVE STUDY OF A SERIE OF 400 CASES

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Introduction: The atrioventricular block complicates 10 to 20% of inferior myocardial infarctions (MI), its spontaneous evolution is generally regressive. Several authors have noted that the occurrence of atrioventricular block (AVB) in the acute phase of the inferior MI is a marker of poor prognosis, nevertheless this data remains contested by other authors.

Goal: To study to what extent the occurrence of a block affects the short-term prognosis of inferior infarction and what is the profile of patients with poor prognosis.

Methods: This is a retrospective study of a serie of 400 cases of inferior myocardial infarction collected in the cardiology department of Habib Thameur Hospital between 1998 and 2009. Our population includes inferior infarctions extended in lateral, basal or to the right ventricle diagnosed on clinical and electrical criteria and hospitalized in the acute phase. We divided our patients into two groups. The first group consisted of patients who developed an AVB and the second group patients who did not have an AVB. Statistical analysis by SPSS 11.0.

Results: The average age of our patients was 57 years old with extremes between 37 to 78 years old. A male predominance was noted with a sex ratio of 0.8.

In the first group: 100 cases of AVB (25%) were observed in which 72 AVB were complete (18%). External electrosystolic stimulation was performed to only 7 patients. In all cases the AVB was resolved either spontaneously or after revascularization.

The two groups of patients were compared and noted:
- more mortality in the first group 7% versus 2% in the second group with a significant statistical difference.
- 10% of cardiogenic shock in the first group versus 4%.
- 17% of left heart failure in the first group versus 7%.

In case of AVB, there are more lesions on the left coronary and more left ventricular dysfunction but without significant statistical difference.

Conclusion: The occurrence of an atrioventricular block in the acute phase of the inferior myocardial infarction appears in our retrospective study, as a factor of poor prognosis during the hospital phase.
Background: Takayasu’s arteritis is a common disease, involving young persons, specially women, which may have several clinical presentations. A coronary disease can be the revealing form, with most often severe ostial lesions of the main coronary arteries associated with a pejorative prognosis.

Case presentation: A 30 years old well being female, with no cardiovascular risk factors, hospitalised for an acute coronary syndrome with ST segment elevation in the inferior territory, complicated with a third degree atrioventricular block and syncope. The clinical examination shows a weak pulse at higher members with a blood pressure at 90/60 mmHg. A primary PCI is performed, revealing coronary ectasia, a severe stenosis of the ostia of the left main coronary artery (LMCA) and a chronic thrombotic occlusion of the right coronary artery. The PCI of the right coronary artery failed and a CABG is indicated. Biology showed high CRP and ESR. Vascular doppler of the upper limbs found a thickening of the wall of the humeral arteries, with a stenosis of the left brachial artery, in favour of a Takayasu’s arteritis. A medical treatment with corticosteroids is indicated, but the patient passed away few weeks later by a sudden cardiac death at home.

Discussion: Coronary artery involvement may appear in up to a third of patients with Takayasu’s arteritis (TA). Three main pathological features are described: stenosis or occlusion of the coronary ostia and the proximal segments of the coronary arteries; diffuse or focal coronary arteritis, which may extend diffusely to all epicardial branches or may involve focal segments, so-called skip lesions and coronary aneurysms. The optimal revascularization method for coronary involvement and for LMCA specifically, has not been determined. The prognosis in TA depends on two main factors: the presence of progressive inflammatory disease versus a prolonged remission state and the clinical implications that evolve from the localization of the vascular lesions such as in the case of coronary or carotid involvement.

Conclusion: Occlusion of the ostia of the left main coronary artery and of proximal segments of the coronary arteries is the most frequent finding of the coronary vasculature in patients with Takayasu’s arteritis. Revascularizations are often unsuccessful, particularly when the inflammatory disease is not under satisfactory control.
Obesity is an increasingly prevalent metabolic disorder affecting not only the US population but also that of the developing world. It is estimated from the third National Health and Nutrition Examination Survey (NHANES III) (1988-1991) that 33% of the US population is obese, compared with 25% in NHANES II (1976-1980). Fatness is associated with a number of comorbidities, including several forms of heart disease. Although heredity explains 30% to 70% of cases of obesity, environmental contributions to the increasing prevalence of obesity must be sought since the gene pool has remained stable over the same interval. Diets high in fat (and calories) and a reduced expenditure of energy in the form of physical activity are the most likely explanations. Insulin resistance and accompanying hyperinsulinemia are typically associated with these comorbidities. Although most of the comorbidities relating obesity to coronary artery disease increase as BMI increases, they also relate to body fat distribution. Long-term longitudinal studies, however, indicate that obesity as such not only relates to but independently predicts coronary atherosclerosis. An overview of obesity and heart complications is done and some measures to prevent its burden on cardiovascular mortality and morbidity are discussed.

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**Article**

**English Title**

Epidemiology of heart failure in Sub Saharian Africa case of Niger republic

**Category**

Abstract

**Topic**

Other

**English Abstract**

**Introduction:** HEART FAILURE is common heart diseases that often occur in cardiac patient during its evolution. It’s prevalence is 2-3% of Adult population i.e. 23 millions in the world, 10-20% after 70 years old. In Africa: Hospital based studies: RCI 40%; Sénégal 37.7%; Togo 28.6% patients < 45 yo With High Morbi-mortality rate: mortality 45-60% in the following 5 years

**Methods:** Type: retrospective and prospective study  
Period: 09 years (janvier 2010-September 2018)  
SITE: LAMORDE TEACHING HOSPITAL DEPT CARDIOLOGY  
Inclusion CRITERIAS: all patients admitted for HF diagnosed on clinical and echocardiographical findings.

**Results:** From 1st January 2010 to 30th SEPTEMBER 2018 (105 months): 1447 HF patients on 3021 cardiac patients. Prevalence: 47.88% during 105 months equivalent to 13-14 cases per month approximately 1 case each 2days. The principal aetiologies are DCI: 26.74%; ischemic HD: 4.63%; dysthyroiditis: 0.34%; PPCM: 12.85%; HBP: 45.75%; pericarditis: 0.48% and valvulopathy: 9.19%. Management of these cases of heart failure are discusses in our context.

**Conclusion:** in most of african countries heart failure are still die to hypertension cardiomyopatis and valvular deseases. most often wese anemia and infection. The prevention of these cases should be take in advance to avoid late stages wese important mortality and morbidity.

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In-hospital outcomes in female patients after STEMI and primary PCI: insight from a Tunisian cohort

Abstract

Introduction: A higher early mortality rate after STEMI has been reported in women before the widespread use of PCI in STEMI. PCI improves the prognosis of STEMI, however, the effect of PCI in women in this setting is controversial. In a large regional prospective registry, we examined the in-hospital mortality after PCI for STEMI. We aimed to determine if female gender is an independent predictor of in-hospital mortality after percutaneous coronary intervention (PCI) for ST segment elevation myocardial infarction (STEMI).

Methods: This was a retrospective study which included all patients diagnosed with STEMI and hospitalized in the cardiology department of Monastir hospital, Tunisia and treated by primary PCI, between 2008 and 2017. We studied in-hospital prognosis and outcomes of female patients.

Results: Three hundred fifty-five patients are treated by primary percutaneous coronary intervention (PCI). 21.9% were women. Female patients were significantly older than men, 69.7 ± 14.3 years versus 59.3 ± 13.0 years (p<0.0001). The rate of diabetes mellitus and cardiogenic shock were significantly higher in women versus men, respectively 19.0% versus 15.6%, p<0.0001 and 6.7% versus 4.0%, p<0.0001. The success rate of PCI was significantly lower in women: 94.7% versus 95.9%, p=0.002. In-hospital mortality was significantly higher in women 9.8 % versus 4.3%, p<0.0001 and the impact of gender on mortality was significant only after the age of 75. By multivariate analysis, female gender is associated with higher in-hospital mortality.

Conclusions: After PCI for STEMI, female gender is still an independent predictor of in-hospital mortality.
Background: It is not known whether prehospital fibrinolysis, coupled with timely coronary angiography, provides a clinical outcome similar to that with primary percutaneous coronary intervention (PCI) early after acute ST-segment elevation myocardial infarction (STEMI).

Methods: Patients diagnosed with STEMI and hospitalized in the cardiology department of Monastir hospital, between 1995 and 2015. We compared the two groups patients who were treated by primary PCI and patients treated by fibrinolysis. The primary end point was a composite of death, shock, congestive heart failure, or reinfarction up to 30 days.

Results: The primary end point occurred in 47 of 380 patients (12.4%) in the fibrinolysis group and in 64 of 450 patients (14.3%) in the primary PCI group (relative risk in the fibrinolysis group, 0.86; 95% confidence interval, 0.68 to 1.09; \( p = 0.21 \)). Emergency angiography was required in 36.3% of patients in the fibrinolysis group, whereas the remainder of patients underwent angiography at a median of 17 hours after randomization. More intracranial hemorrhages occurred in the fibrinolysis group than in the primary PCI group (1.0% vs. 0.2%, \( p = 0.04 \); after protocol amendment, 0.5% vs. 0.3%, \( p = 0.45 \)). The rates of nonintracranial bleeding were similar in the two groups.

Conclusions: Prehospital fibrinolysis with timely coronary angiography resulted in effective reperfusion in patients with early STEMI who could not undergo primary PCI within 1 hour after the first medical contact. However, fibrinolysis was associated with a slightly increased risk of intracranial bleeding.
### Article

**English Title**

Epidemiologic profile of patients admitted for cardiogenic shock complicating a STEMI: MIRAMI registry

**Category**

Acute Coronary Syndromes

**Abstract**

**Introduction:** Cardiogenic shock (CS) is considered as a devastating complication of the ST elevation acute myocardial infarction (STEMI). Its mortality remains high although the huge progress in critical care and coronary revascularization.

**Aim:** Determine the epidemiological features of patients admitted for CS complicating a STEMI (CS-STEMI) in the MIRAMI registry.

**Materials and methods:** It is a retrospective, mono-centric study including 267 patients from the MIRAMI (MonastIR Acute Myocardial Infarction) registry between 1995 and 2016. These patients presented a CS-STEMI which occurred at admission or during their hospitalization.

**Results:** The incidence of CC was 15%, mostly in men (77.9%) with decreasing tendency over the years. The incidence was comparable between seasons but slightly marked in winter (35%). The mean age was 64.18 ± 12.5 years and most patients were aged between 45 and 75 years old (72.6%). Most of the patients had at least one cardiovascular risk factor (90.6%). Smoking was the most frequent risk factor (62.5%). Diabetes and hypertension occurred respectively in 44.9% and 34.5% of patients. Dyslipidemia was found only in 9.4% of patients. Most of the patients hadn’t a history of cardiovascular disease (88%). An acute chest pain was principal symptom in all patients. The mean delay from symptoms onset to hospitalization was 5 ± [3, 10] hours. Only half of patients was transported to hospital by medically assisted ambulance (SAMU). The mean transportation delay was 60 ± [30-90 min]. In-hospital mortality was 49.1%. Some epidemiological factors had a significant impact survival.

**Conclusion:** The incidence of CS is significant with a high in hospital mortality. A sharp comprehension of the epidemiological features helps predict this lethal complication and alleviate its mortality.

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Background: Coronary artery disease (CAD) is the leading cause of death worldwide. Although there has been a drop in the prevalence and mortality from CAD in the western world, the reverse is happening in developing countries. In sub-Saharan Africa, there is a paucity of studies to support the rising burden of CAD, thus this information is needed to assist health care and policies planning in the region. The aim of this study was to find the predictors of CAD in patients who underwent coronary angiography (CA), the gold standard diagnostic test at the unique cardiac catheterization center in Cameroon.

Methods: Medical files of all patients who underwent CA at Shisong Cardiac Centre (SCC) between March 2010 and February 2017 were analyzed for risk factors and CA results. Comparisons were made using the Chi-square and Fischer’s exact tests for frequencies and student t-test for means. The logistic regression model was used for multivariate analysis. Data was collected and analyzed using Epi Info 7.2.1.0.

Results: Of 250 patients included in the study, 172 (68.80%) were males. Their mean age was 54.59±10.40 years. Most patients, 213 (85.20%) lived in an urban setting. The prevalence of CAD was 28.8%. The group of patients with CAD compared with those without CAD had a higher statistically significant proportion of males (86.11%, \( p < 0.001 \)), hypertension (70.83%, \( p < 0.001 \)), dyslipidemia (51.39%, \( p < 0.001 \)), diabetes (31.94%, \( p < 0.001 \)) and obesity (30.56% \( p = 0.006 \)). In multivariate analysis; diabetes, hypertension, dyslipidemia and male gender remained significant predictors of CAD. We, however, found no association between family history of CAD, smoking and age and CAD. Among patients with CAD, 33 (45.83%) had two cardiovascular risk factors (CVRFs), 20 (27.78%) had one CVRF, 14 (19.44%) had three CVRF and 2 (2.78%) had four CVRF.

Conclusions: In our study, CAD affects the generation of breadwinners, predominantly males living in urban areas. Diabetes, hypertension, male gender and dyslipidemia are strong predictors of CAD in Cameroon. With several studies showing a widespread prevalence of these risk factors in Cameroon, CAD might not be as rare as previously believed.

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Background: Atrial septal defects (ASD) constitute the most common congenital heart disease in adults. The most common anatomical form is ostium secundum (OS) type. Although ASD closure is recommended in those with right heart enlargement, data informing such a recommendation in adults specifically are limited. The aim of our study was to evaluate outcomes of ASD OS closure in adults.

Methods: This was a retrospective, observational, descriptive study conducted in the Cardiovascular Surgery department and the Cardiology department of La Rabta Hospital over a ten-year period from 2008 to 2018. All adult patients (≥20 years) who benefited from surgical or percutaneous ASD OS closure were included. Follow-up minimum period was of 12 months. Primary endpoints were the in-hospital and long-term outcomes in terms of functional status improvement and new supraventricular tachycardias (SVT) incidence. Secondary endpoints were evaluation of echocardiographic parameters after ASD closure.

Results: This cohort study consisted of 50 adult ASD OS patients, with a mean age of 37±14 years. Female were predominant (72%). Baseline characteristics: 58% of patients suffered from dyspnea (≥ NYHA class II) and the prevalence of arrhythmia was 18%. The mean defect size was 25.8±9.9mm and significantly larger in surgical group (p<0.001). The feasibility of surgery and percutaneous intervention was 50% for each technique and their success rate was 100%. Surgery was associated with higher post-operative morbidity and longer hospital stay (p<0.001).

At mean 12±1.4 months follow up, there was an improvement in functional status noted in 79% of initially symptomatic patients. The incidence of new SVT was of 5%. At 3 to 6-month echocardiographic control, a significant decrease in right ventricular and atrial dilatation was reported (from 41.0±5.8 to 31.4±7.1mm (p<0.001) and from 28.6±7.4 to 22.1±5.2cm² (p<0.001) respectively) and pulmonary arterial pressure from 46.3±14.1 to 33.3±7.3mmhg (p<0.001).

Conclusion: The immediate results of the closure techniques are satisfying. Percutaneous closure was associated with lower postoperative morbidity. At long term follow-up, ASD closure in adults permitted a significant improvement in functional status and echocardiographic parameters. The occurrence of arrhythmia increases with survival and therefore requires continuous monitoring.
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Background: Since the 2000’s, thromboaspiration (TA) has been widely used in the percutaneous coronary intervention (PCI) of ST elevation myocardial infarction (STEMI) by improving the myocardial perfusion and avoiding distal embolisation. Otherwise, recent trials have questioned its safety. Therefore, European and American guidelines are against the routine use of manual TA during primary PCI. Our study aimed to evaluate the immediate angiographic results of the TA and to assess predictive factors related to its failure to help the clinical decision making by physicians for the use of TA.

Methods: We performed a prospective study in the Cardiology department of La Rabta hospital from January 2016 to December 2018. We included all patients who underwent TA during a primary PCI for evolving ST segment elevation myocardial infarction (STEMI). TA was used at the operators’ discretion. Efficacity of this technique was assessed in terms of TIMI classification for the coronary flow at the end of procedure.

Results: We have included 60 consecutive patients. Mean age was 59.7±13.6 years. 81.7% were males. Anterior location of STEMI was noted in 60%. 15% of patients presented with cardiogenic shock. The median delay between symptoms and wire crossing was 5h [3.8-8.7] hours. 71.6% of the patients benefited from a GPIIbIIIa inhibitor. Initially, 68.3% of the patients presented a TIMI 0 flow. At the end of the procedure, a TIMI 3 flow was established in 66.7% of the population. We identified 4 cases (6.6%) of in-hospital Major Adverse Cerebrocardiovascular Events.

Our results thus suggest a high rate of angiographic failure (33.3%) following a primary PCI despite the use of TA. The associate factors of a failure TA were the delay between symptoms onset and wire crossing ≥5h (p=0.025) and a cardiogenic shock (p=0.04). Multivariate study showed that tardive presentation with a delay between symptoms onset and wire crossing ≥5h was the only predictive factor of a failed thrombus aspiration (Odds Ratio = 4 CI95% [1.1-14], p=0.037).

Conclusion: In conclusion, despite the limitation of our observational study and its potential selection bias, we noted an important rate of slow flow and no reflow in the setting of primary PCI despite using TA. The delay between symptoms onset and wire crossing ≥5h was a predictive factor of failure of this technique. Identifying such risk factors will improve the effectiveness of the primary PCI with a selective TA.
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Background: Acute coronary syndrome with persistent ST segment elevation (STEMI) is the most serious expression of coronary insufficiency. There is a wide gap between optimal care and the actual care provided to STEMI patients in hospitals around the world. European Society of Cardiology (ESC) has proposed in 2017 quality indicators to reduce this gap and improve the quality of care. The aim of this study was to evaluate quality criteria of STEMI management according to these guidelines.

Methods: A prospective, descriptive, monocentric study was conducted in La Rabta hospital, between January and June 2018. Primary endpoints were based on STEMI management quality indicators as established by the ESC assessing organizational aspects, coronary reperfusion therapy performance measures, hospital and discharge management as well as outcomes in terms of early mortality.

Results: 79 consecutive patients were included. Reperfusion therapy was planned in all patients (72% by fibrinolysis versus 28% by primary percutaneous coronary intervention (PCI)). The main management delays were: pain onset-first medical contact (FMC) of 2.0h [1.0-3.5], FMC-electrocardiogram (ECG) of 15min [10-30], ECG-fibrinolysis of 50min [27-90], ECG-primary PCI of 110min [85-140] if FMC was La Rabta and 236min [200-290] if FMC was another center. Radial route was used in 92% of urgent PCIs and no drug eluting stent was implanted in this context. During the hospital phase, complete or maximal revascularization was achieved in 74% of multivessel disease patients. Echocardiography was performed in all patients prior to discharge. Inhospital mortality was 3%. Intensive care unit and total hospital stay durations were of 3.0 days [2- 5] and 4.0 days [2-8] respectively. On discharge prescription, dual antiplatelet therapy was present in 100%, statins 99%, betablockers 94%, renin angiotensin aldosterone system blockers 90% and proton pump inhibitors 47%. Therapeutic education was provided to all patients and only one patient was referred for cardiac rehabilitation.

Conclusions: Mortality rate found in this study was comparable to contemporary European series. However, some failures, mainly related to early logistics of care, particularly with respect to the organizational performance of the reperfusion strategy, have been noted in our system. Implementation of a myocardial infarction plan with better prehospital management could alleviate these difficulties.
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### Introduction:
We aimed to assess early and mid-term outcomes of balloon valvuloplasty (BVP) interventions in patients with critical pulmonary stenosis (CPS) and to describe predictors of need for additional pulmonary flow and reintervention in this subset of patients.

### Methods:
From January 2011 to January 2018, 14 neonates with CPS were included in this study. All clinical, echocardiographic and catheterisation data obtained prior to BVP and at follow-up were recorded.

### Results:
BVP intervention was successful in 12 patients (85.7%). Nine neonates needed pulmonary blood flow augmentation by prostaglandin infusion prolongation to 5 to 10 days after BVP. Four complications have been recorded including two deaths after BVP. The follow-up within a medium of 12 months is favorable with 8 patients. A transcatheter or surgical reintervention was performed in 4 patients: Two needed balloon redilatation whereas two of them needed Glenn anastomosis. The predictors of need for pulmonary blood flow augmentation after a successful BVP were improvement of right ventricle (RV) compliance, small tricuspid valve (TV) and pulmonary valve (PV) annulus diameters and the presence of bipartite RV. In the follow-up; the predictor factor of reintervention were RV bipartite, small TV and PV annulus.

### Conclusion:
Our study showed the excellent immediate outcomes of BVP who stay the lifesaving treatment of patients with critical pulmonary stenosis.

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Introduction: The common arterial trunk (CAT) is a complex congenital heart disease characterized by the presence of a single arterial trunk at the base of the heart and giving rise to the aorta and pulmonary arteries. The prognosis is bleak if the newborn is not operated. Pediatric heart surgery has progressed worldwide and operative mortality became low. The main determinants are dysplasia of the truncal valve and the type of repair of the pulmonary tract. The purpose of this study is to describe the state of the art.

Patients and Methods: This is a descriptive retrospective study of 19 newborns with a CAT, who were surveyed in the Sahloul hospital cardiology department between 2012 and 2018.

Results: There were 19 cases, with a male predominance (52.63%). The average age of discovery was 25 days. 5 patients have parental consanguinity. In 2 cases the antenatal diagnosis was made. Other circumstances of discovery were: shortness of breath (52.63%), acute respiratory distress + shock (21.05%), heart failure (10.52%) and generalized cyanosis in 5.26%. The ECG was performed in 8 patients who found right ventricular (RV) hypertrophy in 52.63%, sinus tachycardia in 31.57%, first-degree AVB, and ESV in 1 case. The positive diagnosis was retained by TTE, which showed left ventricular dysfunction in 15.78%. The RV was dilated and hypertrophied in 68.42%. The truncal valve was as follows: normal in 68.42%, stenosing in 21.05%, and leaking in 10.52%. This valve was multisigmoid in 5.26%, and dysplastic in 21.05% of cases. The aortic arch was interrupted in 10.52%. The type of the CAT was as follows: Type 1 (63.15%), Type 2 (26.31%), and Type 4 (10.52%). 4 deaths occurred before the surgery. The surgery performed was based on a closure of the IVC and placement of a RV-PA tube in all cases, and in addition a plasty of the aortic arch in 10.52%. The surgery was performed in an average of 3 months. Operative follow-up was simple in 47.36%. Complications occurred for other patients with sternal disunion, nosocomial infection in 3 cases and stenosis of the pulmonary bifurcation in a case requiring stent placement. In the long term, the evolution was thus favorable in 52.63%, stenosis in the pulmonary branches in 15.78% requiring stent placement. The average duration of surveillance is 4.5 years.

Conclusion: CAT is a complex congenital heart disease that requires an early surgical cure to close the IVC and set up a RV-PA tube. This type of surgery is underdeveloped in Tunisia. Antenatal diagnosis is a crucial time.

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Background: Assess the outcomes of primary percutaneous coronary intervention (PCI) in the management of ST-Elevation Myocardial Infarction (STEMI) in Côte d’Ivoire, in the era of new ESC guidelines.

Methods: Between April, 2010 and March, 2019, 572 patients aged 18 years-old presented to catheterization laboratory of Abidjan Heart Institute for STEMI and they were prospectively included in the REgistre Prospectif des Actes de Cardiologie Interventionnelle de l’institut de cardiologie d’Abidjan (REPACI). We selected patients admitted within 48 hours of the onset of symptoms, and who underwent primary PCI. Procedural data and outcomes of PCI were analyzed.

Results: 238 patients/572 patients were admitted for STEMI within 48 hours of symptoms onset (41.6). Primary PCI was performed in 154 patients (64.7%). Mean age was 54.4 ± 10.6 yo. Forty four patients (28.6%) were admitted <12 h, 22 (14.3%) patients between 12 and 24 hours and 88 patients (57.1%) between 24 and 48h. Angiography showed predominantly one-vessel disease (55.8%), and three-vessel disease was reported in 17.5% of cases. Most of patients (130/154, 84.4%) underwent primary PCI with stent implantation. Drug-eluting stents were used in 40.8% of cases. PCI was performed successfully in 94.1% of cases. In-hospital mortality-rate was 1.2%, and one-year mortality rate was 1.9%.

Conclusion: Management of STEMI remains challenging in subSaharan Africa, particularly in Côte d’Ivoire. Healthcare policies and regional networks have to be encouraged, in order to improve management of STEMI patients.

Key-words: Percutaneous coronary intervention. STEMI. Subsaharan Africa.

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Introduction: The universal application of percutaneous coronary interventions (PCI) to achieve myocardial revascularization has increased dramatically during last decade. Referral of patients with complex and extensive lesions has consequently increased. Surgeons are increasingly faced to find safe and efficient solutions to this issue. Endarterectomy and reconstruction of the left anterior descending artery (LAD) appeared to be recently a valuable surgical option.

Case presentation: We present, herein, a case of a 60 year old patient with a history of renal insufficiency who is transferred to our department for coronary artery bypass grafting surgery (CABG). A pre operative angiogram showed that he had triple vessel disease with diffusely diseased LAD showing multi segmental long stenosis. Echocardiography revealed mainly a depressed ejection fraction (25%).

The surgery has been conducted under cardiopulmonary bypass (CPB) and an intra-aortic balloon pump has been installed pre operatively. The LAD has been estimated totally “ungraftable” with conventional way. We decide to perform an Endarterectomy then a vein reconstruction of the LAD. We end grafting session of the last one by an outlay anastomosis of the left internal mammary artery (LIMA) to the LAD.

The post operative course has been relatively unventful.

Conclusion: Endarterectomy and reconstruction by venous patch seems to be a safe option in the case of diffusely diseased left anterior descending coronary artery.

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I agree that the email addresses provided may be used in sending emails related to the Cardiovascular field including our Editors’ Choice and reviewer invitations etc.
Background: Open-heart surgery was the only therapy for congenital ventricular septal defects (VSDs) for several decades until the introduction of interventional catheterization in 1988 by the team of JE Lock in Boston. A multitude of devices was used, but the results were initially disappointing with a high rate of residual shunts and interference with the aortic and tricuspid valves. The introduction of the Amplatzer device specifically designed for the closure of muscular VSDs has greatly improved the technique and the results. However, their use remains more controversial for perimembranous and infundibular VSDs because of the risk of atrioventricular block (AVB) and aortic valve lesions.

The aim of this study is to provide an element of answer by relating the experience of our center in the percutaneous closure of congenital ventricular septal defects (VSDs) with Amplatzer Duct Occluder II (ADOII).

Material: This is a retrospective, mono-centric study, conducted from January 2013 to December 2017, including patients hospitalized in the cardiology department of Sahloul hospital in Sousse for percutaneous closure of congenital VSDs.

Results: 12 patients (6 boys and 6 girls) were included at the mean age of 65 months [± 41.4 months] and an average weight of 23 kg [± 10.33 kg]. There were 9 peri-membranous and 3 muscular VSDs. The average size of the defects was 5.36 mm [± 1.12mm] with extremes of 4 to 8 mm. VSDs were restrictive in 11 cases (with signs of volumetric LV overload) and not restrictive in one case.

11 Amplatzer Duct Occluder II type prostheses with an average size of 5.22 mm [± 0.83mm] were used. A procedural failure was noted with the migration of the prosthesis into the pulmonary artery which was removed using lasso. Another child who had perimembranous defect had developed a transient AVB. No deaths were noted.

Conclusion: The use of the ADOII device in the closure of perimembranous and muscular VSDs is safe and effective. The complication rate is low. However, broader and longer follow-up studies are needed to further confirm the safety of this technique.

Immediate and short-term results of percutaneous perimembranous and trabecular ventricular septal defect closure with Amplatzer Duct Occluder II.
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Introduction: Sudden cardiac death (SCD) is a public health problem. In most cases, it is the consequence of ventricular arrhythmias. The only treatment of proven effectiveness is the implantable cardioverter defibrillator (ICD).

Aim: To describe indications for ICD implantation according to the underlying heart disease and report its short and long-term results.

Methods: We report a retrospective and descriptive study involving 90 patients implanted with an ICD in our facility collected between January 2003 and December 2014.

Results: The average age of our population was 49 ± 15 years (14-76). A male predominance was noted (sex ratio: 6). Ischemic heart disease was the most common underlying heart disease found in 37% of cases. The average left ventricular ejection fraction was 43.5 ± 17.7%. A slight predominance of primary prevention was noted in our series (52%). Single, dual and triple chamber ICD were used in respectively 34%, 36% and 30% of cases. The use of triple chamber ICD was more frequent in cardiomyopathies and ischemic heart disease. Early complications were observed in 9 patients (10%). No deaths directly related to the ICD implantation procedure was observed. The mean follow-up was 39.7 months (3-136). We recorded 14 deaths. The main cause of death was refractory heart failure. During follow-up, 16 patients (18%) received appropriate ICD shocks. The only predictor of appropriate therapies was the indication of ICD for secondary prevention ($p = 0.002$). Twenty one patients (23%) had complications inherent to the implantation of ICD. The main complication was inappropriate shocks found in 11 patients (12%). The main cause of these shocks was supraventricular arrhythmias (68%). Ischemic heart disease ($p = 0.001$) and secondary prevention ($p = 0.048$) were significantly associated with the occurrence of inappropriate ICD shocks. The ICD was explanted after varying delays in 4 patients (4.4%).

Conclusion: The results of our study were comparable to major ICD studies and registries particularly in terms of complications rates and occurrence of appropriate ICD therapies.
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**Background:** Takayasu’s arteritis (TA) is an uncommon inflammatory disease with usually a good prognosis. However, sometimes the evolution can be fatal essentially by a coronary arteries involvement.

**Case presentation:** a 30 years old woman, without risk factors, is admitted for a paroxysmal 3rd degree AV block with syncope. The ECG shows myocardial infarction’s sequelae in the inferior territory. Biology finds high level of troponins, a C-reactive protein at 48mg/L and erythrocyte sedimentation rate at 102 mm the 1st hour. A coronarography is then performed, showing coronary ectasia with a very tight stenosis of the ostial left main coronary artery (LMCA), a tight stenosis of the middle left anterior descending coronary artery and a thrombotic occlusion of the right coronary artery (RCA). Angioplasty of the RCA failed and a coronary artery bypass graft (CABG) is indicated. Echo-doppler and CTA of supra-aortic trunks and upper limbs vessels find out lesions in favour of a TA and corticosteroid is started. The patient died suddenly few weeks later.

**Discussion:** Coronary arteries involvement in TA is associated with a poor prognosis and can be life threatening. Death is mainly due to heart failure and myocardial infarction, sudden cardiac death is rarely reported. Three main pathological features of coronary arteries are described in TA: stenosis or occlusion of the coronary ostia and the proximal segments of the coronary arteries; diffuse or focal coronary arteritis and coronary aneurysms. The optimal revascularization method for coronary involvement has not been determined yet. Indeed, revascularizations are often unsuccessful, particularly when the inflammatory disease is not under satisfactory control. Recent publications link the use of drug-eluting stents in patients with coronary heart disease to increased rates of arterial reocclusion and mortality. On the other hand, selective use of drug-eluting stents limited to patients with an uncontrolled inflammatory TA awaiting revascularization may be a proper bridge until such control is obtained, thus possibly improving patency rates of future definite vascular interventions.

**Conclusion:** There is a clear need to improve the outcomes of current therapeutic approaches to patients with TA involving coronary arteries. Medical, interventional and surgical approaches must act synergistically in order to ensure a stable and lasting remission of the disease.

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Development of superior vena cava syndrome (SVCS) with a giant aneurysm of the upper vena cava after Bidirectional Glenn procedure in patient with univentricular heart and PH

**Background:** The bidirectional Glenn procedure (BDG) is a routine intermediary step in single ventricle palliation. Superior vena cava syndrome (SVCS) is one of the major complications of Glenn’s shunt leading to late clinical worsening and increasing mortality. Our goal is to look at the main causes of this complication to avoid it.

**Case report:** We report the case of an 11-year-old girl diagnosed to have a cyanotic complex congenital heart disease (univentricular heart with pulmonary arterial hypertension) who underwent a surgical palliation with pulmonary artery banding at the age of 8 months. Seven years later, she had a bidirectional Glenn anastomosis despite a mean pulmonary arterial pressure measured at 16 mmHg. Currently the patient presents a superior vena cava syndrome with face oedema, jugular vein distension and development of thoracic venous collaterals. Echocardiography showed a giant aneurysm of the superior vena cava with reversal flow through the Glenn anastomosis. Gradient across the pulmonary artery band was measured at 65 mmHg. On cardiac catheterization, the mean pulmonary pressure was measured at 25 mm Hg. Angiography confirmed aneurismal dilation of the superior vena cava and excluded any obstruction on the pulmonary branches.

The patient is scheduled for pulmonary band tightening.

**Conclusion:** Glenn failure with a superior vena cava syndrome with a giant aneurysm of the superior vena cava has never been reported. This complication is due to high pulmonary pressure at the time of Glenn procedure despite of the pulmonary banding because this palliation was done too late and was probably not enough protective.

We insist through this observation on the importance of early and efficient pulmonary artery banding in case of univentricular heart with pulmonary hypertension.
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Introduction: The coronary artery spasm is a reversible occlusion of an epicardic coronary caused by focal constriction of muscular cells of the arteries. There is great variability of symptoms. It can lead to angina and even myocardial infarction causing life-threatening arrhythmias, resulting in sudden death.

Observation: It’s a 66 year old man initially admitted for an instable angina. The EKG was normal and troponins were negative. TTE described a good contractile function of the left ventricle with moderate alteration of the deformation of the antero-septal wall (EF = 55%, SLG = -18.9%). At the coronary angiography: occurring after selective catheterization of an important coronary spam of the LAD and the circumflex with pressures drop of reversible under nitrates derivates (view videos). The diagnostic of coronary spasm causing the angina was retained and the patient was discharged under diltiazem, molsidomine, aspirine and atovastatine

Conclusion: Coronary artery spam is special entity of the coronary disease which can lead to death. Calcium antagonists and long-acting nitrates play a central role in the management of CAS
Introduction: It is well established that there is group of acute coronary syndrome (ACS) patients have non obstructive coronary artery disease (CAD) or normal coronary arteries so called myocardial infraction with non–obstructive coronary arteries (MINOCA). Here by we present 5 short case series of acute chest pain managed as Non ST elevation acute coronary syndrome (NSTE- ACS) in our busy emergency department (ED) during the last 6 months but different etiology on coronary angiography (CAG).

Case presentation:
Case (1); 55 years female with hypertension referred due to recurrent chest pain, no acute ST/T wave changes in ECG with inferior wall hypokinesia on echocardiogram .CAG showed coronary spasm of RCA & ostial of LM completely with intracoronary nitroglycerin .

Case (2); 40 years female with acute typical chest pain ,deep T wave inversion in V2 –V6 & elevated Troponin . Echocardiogram showed hypokinesia of anterioseptal wall and apex .Apical ballooning was seen LV ventriculogram consistent with takotsubo cardiomyopathy.

Case (3); 51 years female with hypertension for 10 years presented with acute chest pain, inverted T waves on V1 –V4 and high troponin. CAG showed coronary fistulae from LAD & RCA to RV.

Case (4); 48 years male with end stage kidney disease ( ESKD) on renal replacement therapy referred due to recurrent chest pain during his HD cession , ECG showed inverted T wave in pericordial leads with elevated Troponin . CAG remarkable for non-obstructive LAD lesion with distal (long segment) myocardial bridging.

Case (5); 17 years male was seen days back with acute chest pain diagnosed NSTE –ACS ie ST depression with T wave inversion V2 –V5 with inferior wall hypokinesia on echocardiogram. CAG through femoral access obtained easily but fail to cross the arch of aorta in spite using different coronary catheters so shift to radial access; normal coronary arteries was found but coarctation of aorta suspected thus aortogram performed to rule out & CT of aorta requested later coarctation confirm.

Conclusion: None of these 5 cases showed obstructive atherosclerotic plaque on CAG as cause of ischemia but revealed coronary spasm, takotsubo cardiomyopathy, coronary fistula; myocardial bridging and coarctation of aorta respectively. Regardless busy Cath lab list general/ interventional cardiologist should be alert to these entity as identification of MINOCA is important for guidance their management & predict the prognosis.
**Background:** The optimal strategy for treating ostial left anterior descending coronary artery (LAD) disease remains matter of speculation. We evaluated the impact on short, mid and long-term outcomes of ostial LAD disease treated by means of ostial stenting (the floating-stent) or left main (LM)-to-LAD cross-over stenting.

**Methods:** Clinical and instrumental records of 60 consecutive patients with isolated ostial LAD disease, enrolled between the 1st October 2012 and the 1st May 2018 were reviewed. Patients have been stratified according the stenting techniques adopted: ostial stenting (OS) or LM cross-over (CO).

**Results:** Sixty consecutive patients (49 males, mean age 63.9±10.8 years old) have been analyzed. Hypertension and diabetes were the most frequent risk factors (50% and 40% respectively). In CO patients the SYNTAX score (23.2±3.6 vs 17.9±4.2, \( p = 0.04 \)). On a mean follow-up of 11.06± 1.9 months, major adverse cardiac events (MACE) and target vessel revascularization (TVR) were 26.6%. Restenosis was higher in the OS than in CO group of patients and was located angiographically at the ostium (\( p = 0.02 \)). The predictive factors of MACE were the severity of clinical presentation (ST segment elevated myocardial infarction and heart failure), stenting technique (OS) and the stent diameter.

**Conclusions:** On long-term follow-up CO seems to be superior to OS technique for isolated ostial LAD disease.

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Background: Fetal aortic stenosis (AoS) is a challenging and controversial congenital heart disease that may progress to hypoplastic left heart syndrome (HLHS) in utero. Prenatal ultrasound screening has become more widespread and fetal echocardiography has advanced. There are currently no data, prenatal or postnatal, describing survival of fetuses or neonates with AoS or HLHS especially in our country. Fetal aortic valvuloplasty in AoS may restore normal growth and function of the left ventricle. We report our experience with three cases of AoS showing postnatal valvuloplasty outcomes.

Case 1: A 30 live-born fetus was diagnosed with hydrops fetalis. Prenatal echocardiography showed an AoS, severe left ventricular (LV) dysfunction, left ventricular outflow tract obstruction and no coartation. Diagnosis was confirmed on postnatal echocardiography. Neonatal valvuloplasty was indicated but the neonate was born in a critical state and he died in the early neonatal period.

Case 2: A 32 live-born fetus was diagnosed, in prenatal period, have an AoS with LV dysfunction and important dilatation of right ventricular. The diagnosis of AoS was confirmed by postnatal echocardiography. Postnatal valvuloplasty was performed at two days of life, but he died in post procedural.

Case 3: Prenatal echocardiography was performed on 31 live-born fetus showed an AoS, LV dysfunction, no LV outflow tract obstruction. Diagnosis was confirmed in postnatal and a valvuloplasty was performed with immediate success. Subsequent evolution was defavorable marked by a septic shock. He died one week after dilatation.

Conclusion: Prenatal diagnosis of AoS is increasingly common, allowing improved counseling, and the potential for fetal intervention if indicated. Exciting progress continues to be made in the area of fetal diagnosis and intervention, specifically catheter intervention for intact atrial septum or severe aortic stenosis. In our experience, we have had disappointing outcomes despite prenatal diagnosis. Therapeutic intervention in utero should be developed to restore normal growth and function of LV.
Background: Constrictive pericarditis (CP) is rare in adults and even rarer in children. It is the most challenging entity to differentiate from restrictive cardiomyopathy. Transthoracic two dimensional and Doppler echocardiography, computerized tomography (CT) and magnetic resonance imaging (MRI) provide an incremental data for the diagnosis. Cardiac catheterization has been the gold standard for the diagnosis, but is this still true nowadays and especially in children? We report 03 challenging cases of CP in child with these clinical presentations and diagnostical procedure.

Cases presentation:
Case 1: A 7-years old boy followed for idiopathic pulmonary arterial hypertension was admitted in right heart failure. Echocardiography showed biatrial enlargement, restrictive filling profile, and pulmonary arterial hypertension PAH, stenosis of the left pulmonary veins and mild circonfirenciel pericardic effusion. CT scan showed pericardic calcification. Diagnosis of CP was confirmed by cardiac catheterization. In our case pulmonary arterial hypertension was explained by the stenosis of the left pulmonary veins caused by pericardial compression and confirmed by the hemodynamic study (PAH type 2).

Case 2: A 7-years old boy was admitted for an oedematous syndrome. Echocardiography showed dilatation of the right heart cavities and the lower veina cava with a pericardic thickening. MRI objectified pericardic thickening. Cardiac catheterization confirmed CP showing the appearance of ‘dip and plateau’. Tuberculosis has been confirmed as etiology of CP. Pericardectomy was successfully performed.

Case 3: A 12 –year’s old girl, with the history of multifocal tuberculosis, was admitted for oedematous syndrome. Echocardiography objectified a restrictive syndrome without pulmonary arterial hypertension, paradoxical septum and a small pericardic effusion in right antero-ventricle of 13 mm without calcification. CT scan showed pericardic thickening and calcification.

Conclusion: CP is a challenging diagnosis. Cardiac catheterization allows the difference between CP and restrictive cardiomyopathy. Numerous recent studies have reported on the ability of Doppler echocardiography, or radionuclide angiography to distinguish constriction from restriction. In our cases, we found a good correlation between imaging and hemodynamic data. Therefore, can catheterization be avoided and are ultrasound data and non-invasive imaging sufficient especially in children?
Background: Coronary artery disease is the leading cause of cardiovascular death worldwide. It's becoming a major concern in developing country due to adoption of Western countries lifestyle. It affects as well older patients of more than 45 years as young adult.

We report a case of cardiogenic shock related to myocardial infarction in young adult.

Case Presentation: A 39 year-old man was admitted to our ICCU (Intensive Coronary Care Unit) for cardiogenic shock. He presented 6 days before a constrictive chest pain lasting for more than 30 min with shortness of breath. He had a history of smoking and hypertension. There was no family history of sudden death or cardiac disease.

The first ECG (Electrocardiogram) revealed a sinus rhythm with complete RBBB (Right Bundle Branch Bloc) figure 1. CT scan excluded pulmonary embolism and aortic dissection.

Five days later, he developed cardiogenic shock, ECG revealed negative T waves in the inferior leads and q wave in the anterior ones (figure 2). Echocardiogram showed a severe LVEF (Left Ventricle Ejection Fraction) depression of 28% in Simpson Biplan with low stroke volume and moderate MR (mitral regurgitation). The patient was then admitted to ICCU and stabilized under Dobutamin infusion.

The coronary angiogram (figure 3) highlighted double occlusion of mid LCX and distal portion of the proximal LAD.

After heart team discussion, we decided to perform PCI of both LCX and LAD after 2 days. Meanwhile the patient was still on Dobutamin infusion, anticoagulation and antiplatelet therapy (Aspirin and Clopidogrel).

PCI of mid LCX was quite simple, with implantation of a long DES (drug eluting stent) after pre dilatation with a small balloon.

LAD PCI was more difficult, requiring a microcatheter and CTO guidewire to finally cross the occlusion. Pre dilatation with small balloon re opened the LAD but revealed a medina 0-1-0 bifurcation lesion. A provisional single-stent strategy was adopted initially but was then completed by POT, re-crossing side branch and balloon angioplasty of the latter.

Haemodynamic was then correct and Dobutamin removed. Repeat echocardiogram showed 35% LVEF . Clinical status was improved and the patient was discharged after one week.

He was integrated to cardiac rehabilitation program.

Conclusion: Young adult myocardial infarction can be very brutal leading to complication as cardiogenic shock if not addressed early. The main causal factor remains tobacco use in this group of population.
Introduction: Penetrating wounds in the neck are known to be difficult to assess because they involve a complex anatomical region where several vital structures coexist in a limited space. The risk of vascular, upper air, neurological and pharyngo-oesophageal injury is real. During the last ten years, technological advances in imaging have changed the management of these patients, allowing stable patients non-invasive management that has relegated to the background of systematic surgical exploration.

Clinical case: We report the case of a 16-year-old boy, a tobacco user and cannabis user, with no previous history; who was stabbed in the left side of the neck. This resulted in an immediate jet bleed that declined after manual compression as reported by the child. The patient went to the emergency room. At the initial physical examination, he was well oriented, without motor deficit, with a good hemodynamic and respiratory state; there was a 2 cm wound at the left side of the neck without active bleeding. Cervical angiography was performed, which concluded that the left anterior carotid artery had a wound in front of C4 with active bleeding and infiltration of surrounding tissues responsible for a mass effect on medial cervical structures. The child was then conditioned and rushed to the operating room. During the anesthesia, the patient had a hypertensive peak, which caused again a large abundance of controlled jet bleeds. Intraoperatively, the left common carotid artery was the seat of a 1.5 cm transfected wound, thus perforating the anterior and posterior surfaces that were sutured after clamping the carotid artery on either side. The postoperative course was simple.

Conclusion: Vascular lesions require an urgent surgical procedure. Carotid lesions have been reported in 4 to 15% of patients admitted for penetrating neck wound. Prehospital mortality was 56%. Once admitted to hospital the morbidity and mortality remains heavy. The multi-barrette angio-scanner is the complementary examination of reference in the management of a wounded person with a penetrating wound of the neck. Except uncontrollable haemorrhagic shock where admission to the operating room is a priority for hemostasis of the lesion, the CT scan should always be performed in any stable patient.
Early stenosis of percutaneous Melody valve

Kaouthar HAKIM, Houda BELKHIRIA, Asmatou Keita, Hela Msaad, Hela Sarray, Sabrine Soudani, Khalil Ouaghlani, Rihab BEN OTHMEN, Fatma OUARDA
Service de Cardiopédiatrie, Hôpital La Rabta, Tunis

**Background:** Percutaneous Melody valve implantation is proved effective in avoiding surgical right ventricular outflow tract repair especially in multi operated patient.

Complications after implantation are reported including infective endocarditis, stent fracture, device dislocation thrombosis and stenosis.

**Case report:** We report a case about a 19- year- old boy who underwent a surgical repair of pulmonary atresia with ventricular septal defect at the age of one year. The right ventricle outflow tract was repaired with a bovine bioprothesis (Contegra tube n°16). The patient developed after 2 years an infective endocarditis with mediastinitis. He was reoperated: replacement of the Contegra conduit with a pulmonary homograft n°20.

Two years later, the Homograft degenerated. To avoid a third sternotomy, the patient benefitted percutaneous implantation of a MELODY VALVE N°22.

One year later, echocardiography showed a severe stenosis of the Melody valve with a peak gradient of 70 mm Hg) with a systolic dysfunction of the right ventricle.

**Conclusion:** The Melody valve shows a good preserved leaflet function. Early stenosis in Melody valve is rarely reported, caused mainly by: endocarditis and stent fractures. In our case, it is probably due to alloimmunisation in multiple transfused patient leading to anticoagulant drugs resistance.

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Introduction: Atrial septal defect (ASD) shows typically a right bundle branch block (RBBB), sometimes incomplete on ECG. This is partially due to the right ventricular volume and pressure overload that occurs. ASD may be uncommonly associated with severe pulmonary stenosis. When these 2 conditions are present, significant left-to-right shunt is often prevented by the outflow obstruction.

Case report: We report the case of a 5-year-old girl who had a 12 mm ostium secundum ASD associated with severe valvular pulmonary stenosis.

ECG showed a regular sinus rhythm, right axis deviation, small QRS and early R wave in V1.

After percutaneous dilatation of the pulmonary valve, the gradient dropped from 65 mmHg to 45 mmHg. ECG changed immediately revealing an acute complete RBBB.

Conclusion: This observation shows that an isolated percutaneous treatment of pulmonary stenosis in presence of ASD may worsen the right ventricle loading conditions as witnessed by ECG changes and pleads for a combined percutaneous ASD closure and pulmonary valvuloplasty.
**Introduction:** Children with single ventricle (SV) physiology often undergo staged palliative surgical procedures to regulate their systemic and pulmonary blood flow. This includes connection of superior vena cava with pulmonary artery:bidirectional cavopulmonary Glenn anastomosis (BDG). The keys to a successful BDG are good pulmonary artery branches size, low pulmonary artery pressure (PAP) and low pulmonary resistance. Mean PAP (MPAP) should be below 15 mm Hg.

**Case report:** We report the case of a 6-year-old patient with complex univentricular physiology who presented with worsening exercise intolerance and chronic cyanosis. Echocardiography showed a normal single ventricle function, a moderate atrio-ventricular valve regurgitation and a peak gradient of 70 mm HG on the pulmonary artery. Cardiac CT scan showed a good size of the pulmonary artery branches. The mean PAP measured by catheterization was 18 mmHg. After discussion in a multidisciplinary meeting, the patient underwent surgery. Per-operative MPAP was 12 mmHg allowing a double bidirectional Glenn anastomosis without additional surgical intervention on the pulmonary artery or on the atrioventricular valve. On post-surgical follow-up, the patient developed rapid heart failure and superior vena cava syndrome with fatal outcome.

**Conclusion:** This observation shows that limit PAP values in children with late-diagnosed univentricular geart disease is usually doomed to fail. Therefore, lower thresholds of PAP before BDG are required. In this case, BDG had to be associated to atrioventricular valve repair and pulmonary artery banding to prevent late pulmonary hypertension and cavo-pulmonary connection failure.

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In-hospital mortality in cardiogenic SHOCK complicating a STEMI: role of biological factors (MIRAMI Registry)

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**Introduction:** Cardiogenic shock (CC) is considered as a devastating complication of the ST elevation acute myocardial infarction (STEMI). Its mortality remains high although the huge progress in critical care and coronary revascularization.

**Aim:** We aim to determine the biological predictive factors of in-hospital mortality in CC complicating acute STEMI in the MIRAMI registry.

**Materials and methods:** It is a retrospective, mono-centric study including 267 patients from the MIRAMI (MonastIR Acute Myocardial Infarction) registry between 1995 and 2016. These patients presented a CC complicating a STEMI which occurred at admission or during their hospitalization. We studied the biological features of these patients and analyzed the predicting factors of their in-hospital mortality.

**Results:** The incidence of CC was 15%, mostly in men (77.9%). The mean age was 64.18 ± 12.5 years. Smoking was the most frequent risk factor (62.5%). Diabetes and hypertension occurred respectively in 44.9% and 34.5% of patients. The mean hemoglobin and creatinine rates were respectively 12.5 ± 2.3 g/dl and 142.2 ± 88.26 µmol/l. Anemia was found in 105 patients (39.3%) and significantly more often in elderly (≥ 60 years) \( p < 0.001 \). Renal failure was diagnosed in 159 patients (59.6%) mainly in women and elderly \( p < 0.001 \) respectively. Hyperglycemia was found in 163 patients (61%). Leukocytosis was found in 186 patients (69.9%). Elevated myocardial necrosis markers (CPK, LDH and troponin) was found in most patients. In hospital mortality was 49.1%. Biological predicting factors of in-hospital mortality in a univariate analysis were: anemia \( p = 0.001 \), renal failure \( p < 0.001 \), hyperuremia \( p = 0.002 \), hyperglycemia \( p < 0.001 \), CPK > 500 mmol/l \( p = 0.04 \) and LDH > 5000 mmol/l \( p = 0.024 \). In a multivariate analysis, only renal failure was restrained as an independent predicting factor of in-hospital mortality \( p < 0.001 \).

**Conclusions:** The incidence of cardiogenic shock is significant with a high in hospital mortality. The treatment strategy should be based on an urgent and multi-disciplinary approach taking in account all the biological abnormalities.
Background: Non Compacted Left Ventricle (LVNC) is categorized as an unclassified cardiomyopathy by the World Health Organization/International Society and Federation of Cardiology and as a primary genetic cardiomyopathy by the American Heart Association. The more recent classification of cardiomyopathies proposed by the European Society of Cardiology Working Group on Myocardial and Pericardial Diseases grouped LVNC as a familial unclassified cardiomyopathy.

LVNC also called hypertrabeculation syndrome or spongy myocardium is a rare disorder which is occasionally found accompanying other congenital cardiac anomalies such as ventricular septal defect (VSD).

Case presentation: A diabetic and hypertensive 54-year-old man presented in clinic with palpitations for 4 months. He had no dyspnoea or orthopnoea for last 4 months. He complained of occasional palpitations which had become more frequent for 1 month. He denied chest pain, fever; and had no history of heart problems. His family history was negative for premature coronary artery disease, heart failure, and sudden cardiac death (SCD).

On examination, he was lying comfortably in bed with a pulse of 100 beats/min regular, blood pressure of 140/85 mm Hg. There was no crackle audible at the lung auscultation. There was no clinical signs of heart failure.

The electrocardiogram noted a left bundle branch block (LBBB) with normal sinus rhythm. Transthoracic Echocardiogram showed spongy left ventricle (LV) with hypertrophied trabeculae and deep inter-trabecular recesses with moderate systolic dysfunction (LV ejection fraction approximately 45%) and global hypokinesia and a small perimembranous septal defect closed by aneurysms tissue of the ventricular membranous septum confirmed by cardiac MRI. We completed by an Holter monitoring revealed non sustained ventricular tachycardia (NSVT) correlating with time of symptoms recorded in patient’s diary. The rest of baseline reports were normal. The patient was implanted by an internal cardiac defibrillator. He was discharged after five days in relatively good clinical conditions on standard pharmacological therapy for heart failure and anticoagulation with acenocoumarol.

Conclusion: LVNC is a rare cardiomyopathy, originally described as an isolated disease without other structural cardiac abnormalities. Treatment includes managing heart failure, preventing sudden cardiac death with AICD and anticoagulation.
**Introduction:** The prevalence of Left Circumflex coronary artery (LCx) lesion as culprit in acute coronary syndrome (ACS) is less frequent than the other epicardial arteries. Diagnosis is sometimes challenging and late due to the lack of sensitivity of electrocardiogram in this localization.

**Methods:** We analyzed retrospectively medical data of patients who had presented ACS between June 2018 and June 2019 and which the culprit artery was the LCx or its branches. We picked out clinical, electrical, biological, echocardiographic and angiographic characteristics.

**Results:** We gathered 31 patients distributed in 28 men and 3 women. Sex ratio was 9,3. Average age was 58,7 years old. The most frequent cardiovascular risk factor was tobacco 64,5%.

Patient presented ACS with ST segment elevation in, ACS with persistent ST segment elevation in 26% of cases and ACS without persistent ST segment elevation; NSTEMI in 52% of cases and unstable angina in 10% of cases.

Echocardiography showed a mean ejection fraction 56% and wall motion abnormalities in 55,6%, predominantly in the anterolateral wall 33%.

No hemodynamic or rhythmic complications were noted.

The most frequent abnormality in the ECG was a tall R wave in V1-V2 with early R/S transition, noted in 34%.

Despite arterial occlusion in angiography, ECG did not show ST elevation in four cases.

**Conclusion:** LCx lesion as culprit in ACS is associated with better prognosis than the other coronary arteries. Diagnosis of ACS, in this localization, remains challenging and subtle ECG signs should be looked for.

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Background: Cardiovascular diseases rank first among the leading causes of death. The causes of Myocardial Infarction (MI) may depend on environmental and genetic risk factors.

The aim of the study was to describe the risk factors and genetic features in young patients with MI and compare these findings to those identified in older patients.

Methods: This prospective study was conducted within the Department of Cardiology in conjunction with the cellular pathology lab at the University Hospital of Casablanca between November 2012 and August 2017. Patients aged less than 45 years with MI (group I) were compared to patients older than 55 years with MI (group II). The genetic study focused on the contribution of 8 genes.

Results: We included 140 patients of which 70 were ≤ 45 years. The mean age of the younger cohort was 37.87 years vs 64.21 years in group (II). Both groups were predominantly male. In group (I), smoking was the most frequent risk factor 61.8% vs 38.2% (**p**=0.007).

Hypertension was common in group II (60.7% vs 39.3%; **p**=0.02). No statistically significant differences were observed between the groups in terms of diabetes, obesity, and dyslipidemia.

The analysis revealed six polymorphisms with a significant correlation to an increased risk of MI in young subjects including the C2491T mutation of the factor V gene.

The frequency of the T allele in patients with MI (26.43%) was significantly higher than controls (16.8%, **p**<0.05). A significant association of the mutated TT genotype and the risk of MI was found.

There were no statistically significant correlations between the C2491T mutation of factor V gene and risk factors such as age, gender, diabetes, smoking, and dyslipidemia. However, a positive correlation regarding hypertension and obesity was identified (**p**=0.02 and **p**=0.032 respectively).

Conclusion: The results in this study indicate that genetic variations, although uncommon, are correlated to an increased risk of MI in this cohort. Further studies are needed to further investigate this conclusion.

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Unprotected left main coronary angioplasty, results of a new Cath-lab.

The mean left ventricular ejection fraction was 51.5±10.5%. Left main stenosis was distal in 72.3% of cases, ostial in 18.1% and involved the mid shaft in 9.6%. Bifurcation Medina class 1-1-1 lesions were observed in 20% of distal left main lesions. Three vessel disease was found in 34.9% of patients. The mean SYNTAX score was 24.4±7.1.

The majority of procedures (86.7%) were performed through a 6F radial approach. New generation drug eluting stents were used in 91.5% of cases. One-stent technique was employed in 80% of patients. Final kissing balloon was performed in 54.2% of procedures (100% of those with 2-stent technique).

The mean follow-up was 630±416.1 days. The procedural success rate was 100%. During follow-up, 4 deaths were observed. Stent thrombosis occurred in 1.2% patients. Restenosis was observed in 7.3% and 13.3% at 1 and 2 years, respectively. The cumulative MACCE rate was 19.2%.

Cardiogenic shock at admission was the only independent predictor of cardiovascular events at follow-up. Syntax score superior to 22 and proximal left circumflex lesion tends to be associated with MACCE (p=0.056 and 0.052 respectively).

In our center, left main angioplasty represents an efficient and safe procedure, with low rate of in-hospital complications and good mid-term outcomes.
Introduction: The superior vena cava syndrome includes all the symptoms resulting from an obstruction of venous return through the superior vena cava. It is a rare entity that its iatrogenic origin is growing in the last few years owing to the increasing use of intravascular devices. We will look into the case of a 35 year old female hospitalized in our cardiac surgery department with extended thromboses of a port catheter to discuss the therapeutic options of this rare entity.

Case presentation: We report the case of a 35-year-old woman with a history of breast tumor treated with neo-adjuvant chemotherapy via a right sub-clavicular venous catheter port followed by a lumpectomy. She was admitted to our department with an upper vena cava syndrome caused by a thrombosis extended from the catheter of the superior vena cava to the right atrium. She was treated by a thrombectomy under cardiopulmonary bypass.

Conclusion: Upper vena cava syndrome secondary to a port catheter thrombosis is a severe complication in patients with neoplasm. The therapeutic strategy is based on a multidisciplinary team decision and the surgical treatment remains mandatory.
Introduction: Anemia has been recognized as a strong, independent risk factor for mortality after an acute coronary syndrome (ACS). Estimated prevalence of anemia on admission in the setting of an ACS is between 10% and 43% of the patients. The aim of this study was to evaluate the impact of admission anemia on the outcomes of patients with ACS.

Methods: This prospective study was conducted within the Department of Cardiology at the University Hospital Center of Casablanca. We included 350 patients admitted for ACS in the Intensive Care Unit. We compared two groups: patients with anemia (group I) and without anemia (group II). Anemia was defined as hemoglobin less than 13 mg/dL in men or less than 12 mg/dL in women according to the World Health Organization (WHO).

Results: Of 350 patients included in this study, 94 (26.8%) patients have anemia and the mean age was 57.4 years. In both groups, the male sex was more common. No differences in co-morbidities were found. The mean hemoglobin in group I, II was 10.7 and 13.6 g/dl respectively. The anemia was associated with more left heart decompensation 59.5% vs 25.4% (p=0.002) and more risk for cardiogenic shock 15% vs 4%. In-hospital mortality was 39% in Group I vs 9.6% in Group II (p<0.001).

Conclusion: Anemia following an ACS is associated with worse prognosis and high risk of death or adverse events. It became a promising risk stratification factor.

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Background: coarctation of the aorta (CAO) is congenital cardiovascular malformation of high prevalence, characterized by a narrowing of the thoracic aorta usually just distal to the left subclavian artery. Untreated, it leads to early death predominantly because of hypertension and its cardiovascular sequelae. The traditional treatment is open surgical repair. More recently, endovascular techniques have offered a minimally invasive alternative to traditional open repair, with good results particularly in adults and older children.

Objective: The aim of this study is to report the results of our beginning experience on balloon angioplasty and stenting of native and recurrent CAO.

Methods: Since 2009, a total of 17 patients who underwent transcatheter intervention for CAO in our faculty were assigned retrospectively. Procedural success is defined as peak systolic pressure gradient after balloon therapy or stent implantation <20 mm Hg.

Results: There were 11 males and 6 females. The main age was 11.47 years (3 months to 39 years old). There were 12 natives CAO. 9 patients underwent stent implantation and balloon angioplasty was the treatment in 7 cases. Procedural success was achieved in 14 cases (82%). 1 case was complicated with stent migration to the left iliac artery. The peak systolic pressure gradient decreased from 58±20 mm Hg to 12±11 mmHg immediately after the procedure. There were no deaths related to the procedure. On follow-up, 3 patients (17%) aged 17, 18 and 24 years old, treated with initial stent implantation underwent balloon angioplasty for recoarctation. /the mean time course to restenosis was 7 months. Aneurysm of the left subclavian artery was found in one patient and was treated with the implantation of a covered stent.

Conclusion: Our small and beginning experience in endovascular management of CAO reinforce the impression of an effective and safe therapeutic option, with low rate of complications and less invasive particularly in adults and older children.

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Background: Significant disparities exist in access to coronary angiography and myocardial revascularization, in patients with acute coronary syndromes (ACS). We tried to evaluate the influence of the installation of a catheterization laboratory on the management of patients presenting with ACS, through a comparison of two cohorts of patients admitted before and after its installation.

Methods: We reported the results of a non-randomized, comparative study, including two series of 100 consecutive patients, hospitalized for ACS at the cardiology department of the Abderrahmen Mami hospital, Ariana in 2007 and 2013.

Results: There was a clear male predominance in both cohorts. In 2013, patients tended to be older (61.4 ± 11.8 compared to 58.1 ± 13.6 years, \( p = 0.067 \)).

Almost half of patients (59%) in 2007 had coronary angiography compared to almost all patients in 2013 (98%). The delay for coronary angiography was significantly shorter in 2013 (2.4 days vs 15.5 days, \( p < 0.001 \)). Coronary angiography was performed essentially by radial route in 2013 (92.8%), whereas this route was used only in 10.5% of cases in 2007.

There was an increase in the rate of revascularization by angioplasty, from 65.2% in 2007 to 83.5% in 2013. The mean number of dilated coronary arteries rose from 1.24 ± 0.12 per patient in 2007 to 1.52 ± 0.2 in 2013 (\( p = 0.024 \)).

Hospital complications rate decreased from 29% in 2007 to 13% in 2013 (\( p < 0.001 \)). This reduction was mainly related to a reduction in ischemic recurrences from 14% in 2007 to 0% in 2013 (\( p < 0.001 \)).

The average length of hospital stay decreased from 9.6 days in 2007 to 5.1 days in 2013, this difference being statistically significant (\( p < 0.001 \)).

Conclusion: Our results showed a positive impact of the installation of a new catheterization laboratory on rates of coronary angiography and angioplasty revascularization which were performed with shorter delays. This led to a reduction in the rate of hospital complications and average lengths of stay. These results can be used to support the installation of new catheterization rooms in the public sector, provided that they can benefit from the presence of experienced operators and the support of the administrative structures.

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Background: Diagnosis of chronic kidney disease (CKD) is often made at an advanced stage when therapeutics hoping to stop or at least to slow down its progression are not very effective. Patients with acute coronary syndromes (ACS) are at a high risk of CKD. The aim of our study was to evaluate the prevalence of CKD in patients with ACS.

Methods: This was a prospective study, including 100 consecutive patients, hospitalized for ACS in the cardiology department of the Abderrahmen Mami hospital between January 2014 and May 2014. Diagnosis of CKD was based on the estimation of glomerular filtration rate (GFR) and screening for proteinuria with urine dipsticks and confirmation of proteinuria by a quantitative measurement when positive.

Results: Our population was composed of 17 women and 83 men, mean age 61.5 ± 11 years; men were significantly younger than women. Our patients presented with an ST elevated ACS in 36% of cases of and with a non ST elevated ACS in 64%. The average left ventricular ejection fraction was 52.9 ± 12.3%.

The prevalence of diabetes was 59% (50% of old diabetes and 9% of newly diagnosed diabetes).

The mean GFR was 80.7 ± 33.1 ml / min / 1.73 m². Proteinuria was found in 11% of patients.

The prevalence of the CKD in our population was 34%, 73.5% of the patients were not aware of their disease. Predictive factors of CKD, at admission, were age equal or greater than 60 years, non ST elevated ACS and being on three anti-hypertensive class or more.

Conclusion: Our findings confirm the high prevalence of CKD among patients hospitalized for ACS. Furthermore, nearly three-quarters of patients were unaware of their disease. This justifies a systematic screening for CKD in this population based on the estimation of the GFR and the screening for proteinuria.

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Introduction: Transcatheter aortic valve implantation (TAVI) is nowadays the main treatment that can be safe and effective in patients with severe aortic stenosis and high surgical risk. The most commonly used route in valve implantation is retrograde transfemoral access site. However, in case of contraindications to use the femoral artery, several alternative access routes have been described.

Observation: In the current report, we describe two different cases of non-femoral approaches for a TAVI performed successfully in our Cath-lab.

The first trans arterial retrograde access route was the subclavian artery access performed in a 79-year-old male with severe calcification of the femoral arteries using an Edwards Spien 3 prosthesis. There was no complication during the procedure.

The other alternative retrograde route was the trans carotid approach using the right carotid artery after a surgical cut-down. The valve implanted was an Evolut R self-expanding prosthesis. The procedure was successfully performed in a 80-year-old male with an operated aortic bifurcation occlusion syndrome.

Conclusion: The standard retrograde approach through the femoral artery is contraindicated in patients with excessive atherosclerosis, calcifications, or tortuosity of common femoral arteries or iliac arteries and should be considered cautiously in patients with an aneurysm of the thoracic or abdominal aorta. In these patients, an alternate peripheral access sites should be considered mainly in experimented centers and is also preferable to the trans-apical approach.

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External validation of the European System for Cardiac Operative Risk Evaluation II in a Tunisian population

Introduction: In recent years, adult cardiac surgery has experienced a significant increase in operative risk due to the recruitment of an increasingly elderly population with multiple comorbidities. Despite these technical advances and accumulated knowledge, it remains a high-risk surgery, burdened with many fatal complications. The risk scores in cardiac surgery are intended to estimate the operative mortality according to the characteristics of the patient and the modalities of the surgery. They, therefore, have an important role in estimating the benefit/risk ratio of the interventions and for informing the patient, thus guiding the therapeutic choice.

Objective: The main objective of this study is to evaluate the performance of the predictive model (EuroSCORE II) on a Tunisian population to validate its use in our country.

Methods: This is a retrospective study of data from 418 adult patients undergoing cardiac surgery with cardiopulmonary bypass between 1 January 2015 and 31 December 2016 in the department of cardiovascular and thoracic surgery of the Sahloul University Hospital of Sousse. The EuroSCORE II is calculated using the application validated on the site www.euroscore.org. The performance of the score is evaluated by analyzing its discriminative power by constructing the receiver operating characteristic (ROC) curve and analyzing its calibration using the Hosmer-Lemeshow statistics.

Results: The EuroSCORE II shows good discriminative power in our population with an area under the ROC curve more than 0.7 in all study groups (0.864 ± 0.032 for general cardiac surgery, 0.822±0.061 for coronary surgery, 0.864±0.052 for valvular surgery, and 0.900 ± 0.041 for urgent cardiac surgery). The model appears to be calibrated as well by obtaining P values above the statistical significance level of 0.05 (0.638 for general cardiac surgery, 0.543 for coronary surgery, 0.179 for valvular surgery, and 0.082 for urgent cardiac surgery).

Conclusion: The EuroSCORE II presents acceptable performance in our population, attested by a good discriminative power and an adequate calibration.
Single coronary artery is a rare anomaly of the origin of coronary arteries. There is limited information regarding patient and procedural characteristics, technical feasibility and outcomes associated with percutaneous intervention to these vessels especially in the setting of acute myocardial infarction.

The aim of this clinical case is to report one case of infero lateral and basal myocardial infarction treated by Primary coronary intervention in a patient with a single coronary artery.

A 63 years old man, Smoker was seen for central chest pain lasting for 15 hours and was still still on pain on admission. He was admitted directly to the cath lab. Coronary angiogram showed a single coronary artery arising from the right coronary sinus with thrombotic occlusion of the right branch. He was treated by thrombo aspiration and senting with good result.

PCI to Single coronary artery may be technically challenging, but is feasible and carries favourable short and long-term clinical outcomes. Thrombo aspiration even though not recommended for all patients, can in such cases be of great help, especially if there is high thrombus burden.
Background: No-reflow is a frequent event during percutaneous coronary intervention (PCI) for acute myocardial infarction (AMI), and it may affect cardiac prognosis. We evaluated the occurrence of no-reflow as a predictor of outcomes in patients who underwent PCI for AMI.

Methods: Our study included all patients diagnosed with STEMI and hospitalized in the cardiology department of Monastir hospital, Tunisia and treated by primary PCI, between 2008 and 2017. We identified those with no-reflow (Thrombosis In Myocardial Infarction [TIMI] grade <3 flow at completion of the procedure) and analyzing their baseline characteristics and clinical outcomes.

Results: Three hundred fifty-five patients are treated by primary percutaneous coronary intervention (PCI). 21.9% were women. Patients with no-reflow (n = 40, 11.26%) were older (67 ± 13 vs 60 ± 13 years, \( p = 0.002 \)) and consulted later (5.5 ± 3.7 vs 4.4 ± 3.0 hours, \( p = 0.04 \)) with more TIMI grade 0/1 flow at presentation (90% vs 64%, \( p = 0.001 \)). No-reflow occurred mostly (73%) after stenting. Peak creatine kinase level was higher in patients with no-reflow (2,700 ± 1,900 vs 2,000 ± 1,800, \( p = 0.03 \)) and more often associated with moderate or severe left ventricular dysfunction (68% vs 45%, \( p = 0.006 \)) and increased in-hospital mortality (8.5% vs 3.3%, \( p = 0.04 \)). By multivariate analysis, no-reflow was an independent predictor of in-hospital mortality (odds ratio 3.4, \( p = 0.02 \)). In addition, renal failure (odds ratio 4.39, \( p = 0.0025 \)) and preprocedure TIMI grade 0/1 flow (odds ratio 2.1, \( p = 0.003 \)) were independent predictors of no-reflow.

Conclusion: The association of no-reflow with longer ischemic time and worse initial TIMI flow may indicate the presence of highly organized thrombus with higher rate of distal embolization. Regardless of its mechanism, no-reflow was an independent predictor of increased mortality.

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Introduction: Contrast-induced nephropathy (CIN) is associated with increased hospital stay, morbidity and mortality. Its prevention requires a good identification of patients at risk. The aim of this study to identify CIN risk factors in non urgent coronarography settings.

Methods: In this cohort study, 168 consecutive patients (mean age=59.9±10.1 years, 62.3% were males, 32.4% hypertensive, 39.2% diabetics, and 21.2% with chronic kidney disease (CKD) (estimated glomerular filtration rate (eGFR) < 60 ml/mn) were referred to our center for coronarography in the context of stable coronary artery disease, cardiomyopathy etiological evaluation, or prior to valvular or vascular surgery. CIN was defined by an acute impairment of the renal function occurring within 3 days after contrast media administration in the absence of an alternative etiology with an elevation of the serum creatinine level by ≥ 0.5 mg/dl or ≥ 25%.

CIN incidence was 16.2%. Factors associated to CIN were: Age > 65 ans, diabetes, CKD, left ventricular ejection fraction (LVEF) < 40%, multivessel coronary artery disease, diuretic treatment and contrast media volume (CMV) > 90 ml. In a multivariate analysis, independent risk factors of CIN were CKD (HR=2.37, CI95% [1.3-5.6], p < 0.001), diabetes (HR=2.01, CI95% [1.56-4.98], p < 0.001), LVEF < 40% (HR=1.94, CI95% [1.19-3.67], p=0.004), and CMV > 90 ml (HR=1.72, CI95% [0.99-2.99], p=0.054). Total functional recovery was obtained in 95% of patients. 2 patients were referred to haemodialysis for impairment of a CKD (their baseline creatine clearance were 17 and 25 ml/mn respectively.)

Conclusion: Identification of CIN risk factors in patients undergoing coronarography should be systematic. That might lead to a better indication of preventive measures and/or delaying or avoiding it in patients at very high risk.

English Title
Risk factors of contrast-induced nephropathy after non urgent coronaryography

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In stent restenosis may be due to drug failure or to stent mal apposition. It is important to try to identify the mechanism of the restenosis to guide its treatment.

Here in we report a case of restenosis of a stent of an ostial left main which was probably crushed during control angiogram.

A 56 years old patient with history of PCI to LM, LAD and Lcx in 2013 had coronary angiogram in 2014 that showed no in stent restenosis and no de NOVO stenosis.

He was admitted to our cardiology department on october 2015 for non ST elevated myocardial infarction with angina refractory to medical therapy.

Coronary angiogram showed severe restenosis of the stent to the LM with picture suggesting a crushed stent. PCI was done two days later. OCT was used and confirmed that the stent was crushed with presence of two layers of struts at the ostium and presence of two lumens in stent and under the struts.

OCT was of great help to confirm that the guide wire was in the true lumen and patient was treated with a new DES. Patient is actually asymptomatic with three years follow up.

Control of ostial stent of the LM and RCA may induce a longitudinal compression of this stent leading to restenosis. Intra coronary imaging techniques are of great help to identify the cause of the restenosis and to guide the PCI.
The prognostic value of pulmonary embolism severity index in acute pulmonary embolism

Walid Slimen, Majed Hassine, Mohamed Mehdi Boussadad, Saïda Boucera, Mejdi Ben Messaoud, Marouen Mahjoub, Nidhal Bouchehda, Zohra Dridi, Fethi Betbout, Habib Gammra, Cardiology A department Fattouma Bourguiba University Hospital – Cardiothrombosis Research Laboratory (LR12SP16) – University of Monastir – Tunisia

Background: Prognostic assessment is important for the management of patients with acute pulmonary embolism (PE). The Pulmonary Embolism Severity Index (PESI) score has been previously validated in studies, but its widespread use in clinical practice and validity are uncertain.

Purpose: We sought to validate the PESI as a predictor of short- and intermediate-term mortality.

Methods: Consecutive patients admitted at our institution with a confirmed PE were screened. Information on clinical presentation, diagnostic work-up, treatment and mortality during a 30 day and 1-year follow-up was collected. To facilitate analyses, raw PESI score was dichotomized into low risk (I-II) vs. high risk (III-V) groups.

Results: The cohort included 346 subjects (mean age, 59.2 ± 15.7 years; 56% male). Among these patients, 54.2% were at low risk. No significant difference in baseline characteristics between the 2 groups was found. One-year follow-up was available in 97.8% of patients. There was a significant difference in 30-day mortality between the two groups in favour of the low risk group (7.6% vs 27.1%, p<0.001). This difference is maintained at 1 year.

In multivariate analysis, the PESI (class III-IV versus I-II, OR 6.3, 95% CI 2.4-11.4) was an independent predictors of an adverse outcome (death, cardiogenic shock and need for mechanical ventilation).

The discriminatory power of the PESI score to predict long-term mortality, expressed as the area under the ROC curve, was 0.79 (95% CI, 0.68-0.84) at 1 year.

Conclusions: Our data indicate that the PESI score is a reproducible scoring tool in real life to risk stratify patients with acute PE, can be used to predict the prognosis of patients with PE and helps in definitive the optimal management.
Introduction: Duchenne muscular dystrophy (DMD) is a neuromuscular disease characterized by progressive muscle degeneration and weakness. It is due to a genetic disorder related to X chromosome. Cardiac involvement in DMD usually consists in dilated cardiomyopathy and/or arrhythmias. We discuss through this observation the rare association between DMD and coronary artery disease (CAD).

Case report: We report the case of a 41-year-old male patient of consanguineous parents who was diagnosed with DMD in infancy. He had also history of two cases of DMD among his siblings. He was type 2 diabetic, hypertensive and obese. He was quadriplegic and dependent on a permanent aid for his daily tasks. He was admitted to our department with the diagnosis of silent myocardial infarction without ST segment elevation based on electrocardiogram changes (ST depression 1 mm in lateral leads) and high troponin blood levels (2.19 ng/l) without any chest pain. Dilated cardiomyopathy usually seen in DMD was also suggested. Echocardiography showed non dilated left ventricle (End diastolic diameter = 54 mm), not hypertrophied (septum thickness = 11 mm) with good wall motion and normal ejection fraction (65%).

Coronary angiography showed a severe ostial stenosis of the Left anterior descending artery (LAD). This patient has been referred to coronary bypass surgery (CABG). Postoperative complications were infectious, but 6-month follow up was favorable.

Conclusion: Patients with DMD have compromised myocytes with reduced myocardial tolerance to hypoxemia. This observation suggests more clinical attention to myocardial ischemia in these patients, particularly in the presence of multiple cardiovascular risk factors.
Introduction: Iatrogenic foreign bodies in the heart are rare, may reach the heart by different ways, and cause serious complications. Removal is often indicated because intracardiac foreign bodies may cause septicemia, multiple pulmonary emboli, arrhythmia, perforation or even sudden death.

Case report: In the current report, we describe a successful percutaneous femoral retrieval of a port-a-Cath catheter from the right ventricle. The patient was a 54-year-old male treated for a lymphoma by chemotherapy. The patient main symptoms were recent palpitation and dyspnea. There were no syncope or chest pain. A CT-tomography was performed for the follow-up of the lymphoma and the catheter was discovered in the cavity of the right ventricle. We performed a percutaneous transvenous femoral retrieval using initially a pigtail catheter then the capture and extraction were made using a snare loop device through the inferior vena cava. The extraction was hard since the catheter was inlaid in the wall of the right ventricular. The procedure was uncomplicated and the patient tolerated the procedure well.

Conclusion: The port-a-Cath infusion system placed in patient treated for malignancy can expose to a rare but serious risk of dislodgement with subsequent migration of the catheter into the right side of the heart. Percutaneous retrieval of this device is often considered as a real challenge and must be practiced by experienced operators.

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Background: Percutaneous mitral commissurotomy (PMC) has become the reference treatment for mitral stenosis in patients with favorable valvular anatomy.

Purpose: We sought to evaluate the safety and effectiveness of PMC for patients with mitral stenosis.

Methods: Late results of PMC were assessed in 1035 consecutive patients at our institution. A good immediate result was defined as valve area ≥ 1.5 cm² without mitral regurgitation > 2/4. PMC are using a double balloon or the Inoue balloon.

Results: The average age in our population was 35 ± 12 years. Good immediate results were obtained in 92.4%. The 20-year rate of good functional results (survival without cardiovascular death, mitral surgery, or repeat percutaneous mitral commissurotomy and in New York Heart Association class I or II) was 47.6 ± 2.4%

A multivariable Cox model identified 3 predictive factors of poor late functional results: Prior commissurotomy (p=0.014), Wilkins score>8 (p<0.0001) and final mitral valve area <1.8 cm² (p<0.0001). The scoring system was derived from the final multivariable model in the derivation cohort of 987 patients, corresponding to predicted good functional results in the validation cohort.

Conclusions: Twenty years after percutaneous mitral commissurotomy in a population of patients with varied characteristics, 47% still had good functional results. Prediction of late functional results is multifactorial and strongly determined Wilkins score and the quality of immediate results. A simple validated scoring system is useful for estimating individual patient outcome.

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Background: Marked first-degree atrioventricular (AV) block is a rare but well-recognized cause of the pseudo pacemaker syndrome, whereby atrial systole in close proximity to the preceding ventricular systole leads to various hemodynamic changes, including systemic hypotension, elevated pulmonary arterial pressures, and cannon A-waves.

Patient concerns: We report the case of an 86-year-old man with antecedents of high blood pressure who consults for lipothymia and lower limbs edema. The physical examination revealed only lower limbs edema without other signs of heart failure. Heart rate and blood pressure were normal. The electrocardiogram (ECG) showed normal sinus rhythm with first-degree AV block with PR interval of 340 ms and a Left bundle branch block (QRS 82 ms). Echocardiography showed conserved left ventricular systolic function estimated at 60%, with not constant fusion of E and A waves of the mitral profile. The diagnosis of pseudo pacemaker syndrome was made and the patient was referred for implantation of a dual chamber pacing. All symptoms disappeared after the intervention.

Conclusion: First-degree AV block is typically an asymptomatic electrocardiographic finding, however, its presence has been associated with elevated rates of atrial fibrillation, the need for permanent pacemakers, and mortality, with the burden of risk proportional to the degree of PR interval prolongation.

Literature regarding the treatment of this rare condition has been limited to dual-chamber pacing to restore a typical AV mechanical relationship.
Case Presentation: 61 years old male, previous smoker, admitted in our intensive cardiac care unit for a non ST elevation myocardial infarction. Clinical exam was normal and EKG showed T wave inversion in anterior and lateral leads. Hypersensitive troponin was 2200 ng/L. Ejection fraction was 45% with a large anterior wall hypokinesis. Patient was admitted in the cathlab next morning for angiography. Few seconds after right radial artery puncture and injection of a Heparin and nitrate solution; pressure dramatically dropped to 60/40 mmHg and chest pain reappeared. An urgent coronary angiogram was performed, under Dobutamine and Norepinephrine support that brought back and maintained arterial pressure at a normal level. It showed (Figure 1) : an occluded proximal LAD with a Rentrop 3 retrograde flow from the RCA, a severe thrombotic distal left main stenosis extending to the ostial Left Circumflex artery, that is early divided into an obtuse marginal and a distal LCX with a TIMI 2 flow in both branches, and a long severe stenosis in the mid RCA with a preserved TIMI 3 Flow. 

Treatment: Our strategy was to do an urgent and complete revascularisation. RCA lesion was first treated with 3x33 BMS. Next, using a 6 French EBU guiding catheter through left distal radial approach; both LAD and LCx were wired. After a predilatation, a 3.5x38 mm a SES was deployed to cover LM and the OM branch and TIMI 3 flow was re-established in the LCX (Figure 2A). Access to the LAD was preserved. An intermediate wire was chosen to cross the LAD lesion after a successful first stent strut crossing. Fortunately after few minutes of manipulation, wire crossed the LAD occlusion. It’s position in the true lumen of the distal LAD was checked through retrograde injection from the RCA (Figure 2C). A TIMI I flow was obtained after predilatation of the LAD and procedure was finished after deployment of a second SES using T and protrusion (TAP) technique (Figure 3) with a good final result (Figure 4).
CARDIOMYOPATHY DILATED DURING HEMOCHROMATOSIS

Introduction: Hemochromatosis is a genetic disease caused by excessive intestinal absorption of iron, causing the deposition of this element in various organs such as the liver, heart, pancreas, pituitary, bone, skin and the spleen. Cardiac involvement, observed in 15 to 35% of cases, essentially represented by dilated cardiomyopathy (DCM) and rhythm disorders including atrial fibrillation (AF), is a serious complication occurring at an advanced stage of the disease.

Observation: We report the case of a 45 year old patient followed for sideroblastic anemia since the young age complicated by hemochromatosis as a consequence of multiple transfusions, hospitalized in our service for left cardiac decompensation. On examination, we found dyspnoeic patient with crackles at both lung fields and a huge hepatomegaly. At the ECG, an atrial fibrillation at 110 c/min. In biology, serum iron at 13.4 μM, iron binding capacity of 52 μM, transferrin at 27 μM and ferritin at 232 μg/L. On echocardiography, an aspect of dilated cardiomyopathy with severe LV dysfunction (LVEF = 30%) and PAH at 40 mmHg.

Due to the poor tolerance of the arrhythmia, the patient was shocked twice (300 joules), which resulted a sinus rhythm. Then we sent the patient to the hematology department for further management, where he received cures of deferoxamine. After a follow-up of one year, a cardiac echography showed an improvement of the ejection fraction (LVEF = 45%).

Conclusion: Dilated cardiomyopathy, a rare cardiac complication during hemochromatosis, occurs in advanced forms of the disease and complicated by heavy mortality.

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Background: Cytokines play a potential role in atherosclerosis pathogenesis and progression. We investigated the association between high sensitive C-Reactive Protein (hsCRP) and severity of acute coronary syndrome (ACS).

Methods: 310 ACS patients were recruited from the Department of Cardiology University Hospital, Monastir. Patients were stratified according to hsCRP cut-off value into two groups: high levels hsCRP group (≥8.4 mg/L) and low levels hsCRP group (<8.4 mg/L). Severity of ACS was assessed according to artery stenosis degree and the number of vessel involved. Statistical analysis was performed using Statistical Package for the Social Sciences (SPSS, version 23.0).

Results: The mean age was 60.3 ± 11.0 years. The level of hsCRP was increased and ranged from 0.2 to 1020.0 mg/L. Biochemical risk factors and severity of ACS didn’t show significant differences between the two groups. Heart rate levels in the high hsCRP levels patient group were significantly higher than levels shown in the other group (78.1±17.3 b/min vs. 73.4±15.5 b/min; \( p = 0.045 \)). The correlation between heart rate and hsCRP was significant \( (p= 0.003; r = 0.206) \).

Conclusion: Our findings indicated that heart rate was significantly associated with increased levels of hsCRP. Increased heart rate may reflect a disorder in the autonomic nervous system and generates elevated mechanical stress frequency on the vascular endothelium leading to inflammation and atherosclerosis.
**Background:** Inflammation plays a key role in the pathogenesis of atherosclerosis. Several biomarkers have been purposed to identify patients at high risk needing for more aggressive therapy or early angiography, to detect their risk profile and optimise the treatment. Several studies suggest that cytokines might play a pivotal role in atherosclerosis. We investigated the role of inflammatory biomarkers as serum interleukin-6 (IL-6) and hs-CRP in the prediction of acute coronary syndrome (ACS) and their relationship with Thrombolysis In Myocardial Infarction (TIMI) risk score which determines the likelihood of ischemic events or mortality in patients with ACS.

**Methods:** The subjects were 310 ACS patients and 207 healthy subjects. The serum levels of hs-CRP were measured using a turbidimetric assay on auto-analyzer COBAS integra 400. The serum IL-6 levels were measured by electrochemiluminescence immunoassay “ECLIA” used on Cobas-e 601 immunoassay analyzers. Receiver operating characteristic (ROC) curves were estimated for IL-6 and hs-CRP concentrations. A ROC analysis was planned to identify the power of these markers in the prediction of ACS. We divided CAD patients into three subgroups according to TIMI risk score: Low risk: (TIMI risk score 1-2); Moderate risk: (TIMI risk score 3-4) and High risk: (TIMI risk score ≥5). We used Statistical Package for Social Sciences (SPSS, version 23.0), for data analysis.

**Results:** The levels of IL-6 and hsCRP were more elevated in patients than controls. The area under the ROC curve showed that IL-6 and hsCRP, have significant values in predicting the severity in CAD patients. The AUC of IL-6 level was higher than that of the serum hsCRP level (IL-6: 0.860±0.038; (95% CI: 0.785; 0.935); \(p<0.001\)) vs. (hsCRP: 0.816±0.038; (95% CI: 0.742; 0.889); \(p<0.001\)). IL-6 and hs-CRP levels didn’t differ as TIMI risk score increase respectively: Il-6 (Median: 8.77 vs. 9.71 vs. 9.58 pg/mL; \(p=0.433\)), hs-CRP (Median: 5.04 vs. 7.38 vs. 5.75 mg/L; \(p=0.630\)).

**Conclusion:** The present results indicate that IL-6 and hs-CRP could be potential prognostic biomarkers in ACS. These biomarkers could not be considered as useful predictors of mortality in ACS patients.
Introduction: Aortic stenosis (AS) severity assessment is based firstly on echocardiography, a sufficient tool in the majority of cases, aided by some new techniques. It also allows to evaluate left ventricular function and to predict postoperative prognosis. Preoperative catheterization provides complementary but sometimes contradictory informations. The purpose of this study was to analyze and compare the contribution of catheterization with echocardiography in AS evaluation.

Methods: We gathered retrospectively the data of 52 patients aged from 50 to 82 (37 men) with pure severe AS (mean echocardiographic aortic area: 0.62 +/- 0.21 cm² [0.48-0.82 cm²]). Patients with other significant valvulopathy (grade 2 or more) were excluded, similarly for atrial fibrillation patients.

Results: The mean left ventricular ejection fraction (LVEF) was 62%, 8 patients had systolic dysfunction with LVEF less than 40%. During coronary catheterization, we measured the mean gradient and / or the peak to peak “Left ventricle-Aorta” gradient. The mean gradient by catheterization was 56 +/- 24mmHg. Significant differences between the echocardiographic data and hemodynamics (greater than 20 mmHg) were found in 7 patients (21.8%). The identified (non-exclusive) causes of discordance were firstly the measurement of the single peak-to-peak gradient by catheterization and the mean gradient by echocardiography in 4 patients, a rise in systemic blood pressure in the catheterization room in 3 patients and finally, altered aortic compliance in 3 patients whose measurement was made by echocardiography.

Conclusion: Echocardiographic assessment of AS should include measurement of aortic compliance, which is crucial for comparison with real hemodynamic parameters and useful for surgical indication. Moreover, some misinterpretations are to be avoided such as not measuring concomitant systemic blood pressure.
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Introduction: Infective endocarditis (IE) is a complex disease whose prognosis is still severe despite diagnostic and therapeutic advances. Urgent or early surgery is the mainstay of the management of complicated IE. Purpose of the study: was to study the indications, the interest and the results of early surgery in complicated IE in our study population.

Methods: We conducted a retrospective and descriptive study of a records of 135 patients hospitalized in la Rabta hospital during period between 2008 to 2017 for certain IE. then we reported epidemiological, clinical and therapeutic data of early operated patients.

Results: We have identified 54 cases (40%) of complicated IE among the general population (n = 135) of IE. Average age is 41.6, with a male predominance, the sex ratio is 1.75. Blood cultures were negatives in two third of cases. Streptococcus is the most frequently isolated germ found in 46% Echocardiography showed vegetations in 100% of cases, abscesses in 45.5%, valvular perforation in 13%, and prosthetic dehiscence was observed in half of patients. Early surgery was indicated because complications: it was hemodynamic in 30%, septic in 20%, embolic in 10% and mixed in 40% The early postoperative complications were mainly bleeding and infections rated each in 14% of cases. Recurrence of IE was observed in 9% of patients with a mean time of occurrence estimated to be 12 days. The mortality rate is 13%.

Conclusion: Infective endocarditis remains a serious disease with a high rate of mortality despite advances in surgery and intensive care.
**Introduction:** Heart failure is a frequent disease despite the enormous therapeutic progress, it was associated to poor prognosis due to high mortality, and an important rate of rehospitalisations. The aim of our study was to describe the epidemiological, clinical, therapeutic and evolutionary characteristics of heart failure and to release the predictive factors of mortality and of rehospitalizations.

**Methods:** Prospective study of 110 patients hospitalized for first episode of heart failure, in adult cardiology department of la Rabta hospital during the period from October 2013 to October 2015. We included patients with reduced left ejection fraction function ≤40%. Multivariate analysis was performed using logistic regression model in order to determine predictor factors of mortality and rehospitalisation during HF.

**Results:** The average age was 63.6 ± 11.9 years. Male gender was dominant (with sex ratio of 2.6). Clinically 55% of patients were admitted for left-sided heart failure, 50% for global signs of heart failure and 5% for cardiogenic shock patients. Dominant etiology was ischemic heart disease (45%), valvular heart disease (23%) and idiopathic cardiomyopathy (17%). Angiotensin converting enzyme was prescribed in 88% of cases, beta-blockers (91%) case, spironolactone in 49% of cases. Hospital mortality and at 6 months was respectively 14%, and 17%. Hospitalization for cardiac decompensation was 35%. In multivariate analysis, diabetes, longitudinal global strain, TAPSE and hyperuricemia were independent predictor factors of mortality. Valvular etiology and atrial fibrillation were associated with a high risks for hospitalization.

**Conclusion:** In spite of all the therapeutic advances, the prognosis of the heart failure is still dark, hence the importance of its prevention which consist on an early and effective management of the causal pathology before the deterioration of the left ventricular function.

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**Introduction:** The goals of therapy of heart failure with reduced ejection fraction (HFrEF) are to reduce morbidity (reducing symptoms, improving health-related quality of life and functional status, decreasing the rate of hospitalization) and also reducing mortality.

**Purpose:** Our objective was to identify the therapeutic profile of patient with chronic heart failure according to that recommended.

**Materials:** A retrospective, descriptive study, carried out at department of adults cardiology La Rabta Hospital during a period from 2013 to 2016. We analyzed a record of 110 patients followed for heart failure with ejection fraction < 40%, we were interested on the treatment profile (class of treatment, the name of molecule, doses, tolerance and side effects).

**Results:** A total of 110 patients' files were analyzed. The most often prescribed medications were intravenous diuretics in (90%) then oral presentation. Angiotensin-converting enzyme or angiotensin receptor blocker (ARBs) were prescribed in (88%), and not used in 13 patients because of advanced renal dysfunction in eight patients and lowered blood pressure in five cases. For ramipril the initial dose was 2.5 mg and the maximum tolerated dose was 5 mg. The maximum recommended dose was reached in ten (10%) patients; 91% of patient were received beta blockers (BB); the most used beta blocker was Bisoprolol in all patients. The initial dose was on average 1.87 ± 0.6 mg [1.25; 2.5] and the maximum tolerated dose was 3.68 ± 1.9 mg [1.25; 10]. The Tolerance to this class of treatment was good only in 65% of patients. The main side effects limiting dose optimization were bradycardia in 15%, arterial hypotension in 77% and a transient worsening of dyspnea was noted in 8% patients. Mineralocorticoids receptors antagonists (MRAs) were prescribed in 56%). Triple association of ARBs + beta-blocker + MRAs was present in 48% of cases. Recently 6 patients were put on ivabradine because of fast heart late despite optimal dose of beta blockers. The use of Positive Inotropic Drugs was necessary in six patients (5%) in front of a Cardiogenic Shock with an average duration of 8.2 ± 1.3 days [7; 10]. Myocardial revascularization was indicated in 35% cases, valvular surgery was realized in 19 patients (73%). Resynchronisation therapy was performed in eight patients with complete left bundle block with a ORS duration of 130ms-140ms in one the majority of cases.

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Background: Patients with type 2 diabetes mellitus (T2DM) have early onset of coronary artery disease (CAD) and the involved vessels show severe disease. Severe, multivessel, and extensive disease were shown in diabetic patients. The relationship between activin A levels and severity of angiographically evaluated coronary artery disease (CAD) in patients with T2DM.

Methods: A total of 307 CAD patients were recruited from the Department of Cardiology University Hospital, Monastir. The participants were 148 subjects with T2DM and 159 subjects without T2DM. The severity of CAD was evaluated by angiographic characteristics and Gensini score. Activin A levels were quantified using a commercially available ELISA kit (AbFrontier, Young In Frontier Co., Ltd., Korea). We used Statistical Package for Social Sciences (SPSS, version 23.0), for data analysis.

Results: In non-diabetic patients, activin A levels were significantly higher in patients with severe stenosis than in patients with moderate stenosis (504.0 (214.0 – 1650.0) pg/mL vs. 311.5 (265.0 -538.0) pg/mL; \( p =0.025 \)). Activin A levels were significantly higher in patients with one vessel disease than those in multivessel disease (607.0 (247.0 - 4188.0) pg/mL vs. 352.5 (214.0 - 1650.0) pg/mL; \( p = 0.001 \)). Activin A levels were similar in both GS groups (\( p=0.172 \)). In diabetic patients, activin A levels decrease according to GS values (\( p=0.600 \), and were not associated with angiographic characteristics (\( p>0.05 \)).

Conclusion: Activin A levels were not associated with CAD severity in diabetic patients. Abnormalty of blood glucose levels in diabetes, is known to promote inflammation, accelerating atherosclerosis. It has been shown that may improve insulin resistance through its anti-inflammatory activity. Activin A could play important roles in glucose metabolism by regulating the differentiation and activity of the insulin-producing – cells and the response of insulin target cells.
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**Article**

**English Title**

Angiographic profile during non ST elevation acute coronary syndrom: is there difference between men and women

**Category**

Acute Coronary Syndromes

**Abstract**

**Introduction:** despite the persistent perception that CAD is a man’s disease, it is often the most common cause of death in women, responsible for 7 times more deaths than breast cancer.

**Methods:** we led a retrospective, observational and monocentric study including 120 patients (70 men and 50 women) admitted for non-ST elevation acute coronary syndrom (NSTE-ACS) to the cardiology department “adultes” at the university hospital la rabta between January 2010 and December 2017.

Through a comparative study between men and women the objective of the study was to search on the difference of angiographic characteristics during ACS in these both groups.

**Results:** it was observed that women were more often hypertensive, sedentary, obese and with less smoking rates than men. Presentation and symptoms of coronary artery disease in women are often atypical and misleading, despite their higher ischemic risk (64% for women versus 37% for men with high risk criteria) ($p=0.01$), women seem to benefit less of invasive strategy. Coronary angiography when performed often shows non-obstructive coronary disease (16% in women versus 6% in men). The left anterior descending artery (LAD) was observed in 53% of women versus 26% with $p=0.03$). There were a non significant involvement in two thirds of cases in women at the opposite of men. The circumflex artery and the right coronary artery were each involved in one third of the cases this repartition is comparable to those found in men groups. Coronary revascularization is less frequently proposed in women (67% versus 85%) ($p=0.001$).

**Conclusion:** During NSTE-ACS, women seems to benefit less of invasive strategy the diffuse character of atherosclerosis without significant lesions characterizes coronary disease in women. LAD being the most relevant localization in case of significant injury. Coronary revascularization is less frequently proposed in women.

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Background: The aim of this study is to examine the relationship between homocysteine (Hcy) levels and the severity of coronary artery disease in type 2 diabetic patients (T2DM).

Methods: A total of 307 CAD patients (DM (-), n=159) and (DM (+), n=148) admitted to the Department of Cardiology University Hospital, Monastir were enrolled. T2DM was diagnosed according to the American Diabetes Association criteria. Severity of CAD was expressed by Gensini score (GS) (median = 40). Circulating Hcy levels were determined by Fluorescence Polarization Immunoassay method using an analyzer (AXSYM ABBOTT, Germany). Hyperhomocysteinemia was defined as a concentration of ≥15 μmol/L. We used Statistical Package for Social Sciences (SPSS, version 23.0), for data analysis.

Results: The median of Hcy levels in patients without T2DM were higher than in other patients (20.5 (8.6 - 50.0) μmol/L vs. 14.1 (3.7 - 50.0) μmol/L; p = 0.026). In diabetic CAD patients, Hcy levels were significantly associated with high values of GS (>40) compared to GS<40 group (22.1(7.9 - 48.0) μmol/L vs. 11.9 (3.7 - 27.9) μmol/L; p = 0.006. The correlation between Hcy levels and GS tends to be significant (p = 0.060).

Conclusion: The decrease of Hcy levels among diabetic CAD patients could be attributed to metabolic methylation pathways which are the main regulator of Hcy levels. Our results strongly suggest a role in the regulation of insulin in the hepatic transsulfuration pathway that metabolizes Hcy and decreased its Hcy levels. The association of Hcy with severity of diabetic CAD patients expressed by GS indicates a potential role of DM as cardiovascular complications.
Extracorporeal membrane oxygenation in the reversal of cardiorespiratory failure induced by fatal scorpion envenomation: A case report

M. Abdallah; H. Ammar; A. Jamel; S. Boukhris; H. Brahmi; N. Ebn El Mechri; B. Ibn Ezzine; N. Ben Halima
Cardiology department; Ibn Jazzar Hospital; Kairouan

Introduction: Extracorporeal membrane oxygenation (ECMO) has rapidly developed and is widely used both for circulatory support and for the treatment of acute respiratory distress. Although ECMO is a candidate therapy for life-threatening cardiorespiratory failure, there are no reports of using ECMO in fatal scorpion envenomation.

In the present case, we described the signs and symptoms of scorpion-envenomed pregnant women treated with ECMO. The patient was a 37-year-old G3P2 at 13 weeks of gestation pregnant woman who was admitted to our hospital after being stung by scorpion on her left foot within 3 hours. The patient's condition gradually worsened. However, in the later hours, her anxiety, cold diaphoresis, and tachycardia increased due to respiratory distress and hemodynamic impairment. She was tachypneic (RR: 48/min), intercostal-subcostal retractions, and bilateral coarse crepitations were heard over both lungs. She was tachycardic (HR: 170) and hypotensive (70/40 mmHg). A cyanosis situation is observed (O2 saturation: 84%) and she was given oxygen with oxygen mask (12 L/min). Chest x-ray revealed findings of cardiogenic pulmonary edema. Echocardiographic revealed that the left ventricular cavity was dilated with and FE: 20%. So, she was administered dobutamine and furosemide. The ECG showed T-wave inversion and ST depression in the inferolateral. It was life-threatening and, consequently, we decided to initiate cardiopulmonary support by ECMO.

The infusion of catecholamines was discontinued and the mechanical ventilatory support was gradually decreased. With stable hemodynamics, our patient was successfully weaned from ECMO after 7 days of support. 5 units of red-blood-cell concentrates, 8 units of platelet products were transfused after a bleeding detected during ECMO. Tracheal extubation was performed 42 hours after withdrawal of the ECMO (day 7). Our patient left our intensive care unit on day 12. The control echocardiographic examination was perfect but she has a spontaneous abortion.

Conclusion: Scorpion envenomation is an important clinical entity. It can be fatal especially in pregnant patients.
**Introduction:** Hypertrophic cardiomyopathy (HCM) is the most prevalent (0.2%) heritable, genetic cardiovascular disease. Aortopathies also represent a spectrum of familial inheritance with prevalence of 4%. However, prevalence of aortopathy in HCM patients has not been previously described. We report the case of a 72-year-old hypertensive patient who presented at the stage II dyspnea. The clinical examination found a 4/6 systolic murmur in the mitral focus without signs of heart failure. The ECG showed an electrical LVH with secondary repolarization disorder. Transthoracic echocardiography with transesophageal echocardiography found an hypertrophied left ventricle (SIV = 12mm, PP = 12mm) with good overall and segmental contractility with an obstructive septal bulge (LVOTO= 73 mmHg). The mitral valve is the seat of mitral insufficiency with a double mechanism: Complete anterior systolic movement and elongation of the anterior leaflet. Aneurysms dilatation of the ascending aorta (Sinus = 34mm, ascending = 50mm).

A thoracic angiocan was requested to demonstrate extensive aneurysms dilatation of the aortic root to the proximal portion of the aortic arch, measuring 85x76 mm. The patient was put on medical treatment based on diuretic and beta-blocker. After a medical-surgical discussion, the surgical treatment was a myomectomy associated with a supra-coronary tube.

**Conclusion:** A novel association of HCM with aortopathy was detected. Further studies will define the genetic and pathophysiologic basis and implications of this association.

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Ectopic connection of the left coronary artery with the controlateral sinus

M. Abdallah; N. Ebn El Mechri; H. Brahmi; H. Amma; S. Boukhris; A. Jamel; N. Ben Halima
Cardiology department, Ibn Jazzar Hospital; Kairouan

Introduction: Among the wide spectrum of congenital abnormalities of coronary arteries, a left coronary artery connected with the controlateral sinus is considered as an anatomical high risk while associated with a proximal preaortic course.

Materials and methods: We report the cases of five patients hospitalized between 2014 and 2016 with three patients are hospitalized for acute coronary syndrom, one patient for acute pulmonary edema and one patient for syncope. The diagnosis of ectopic connection of the left coronary artery was suspected on echocardiography in three cases and in the coronary CT angiography in two cases. Coronarography confirms this ectopic connection in all five cases and also shows atherosclerotic coronary lesions in three patients. Two patients received coronary angioplasty, one patient had a coronary artery bypass grafting of the left anterior descending coronary artery and one patient was treated medically after eliminating myocardial ischemia in myocardial scintigraphy.

Discussion: After the diagnosis of anomalous origin of coronary artery, an assessment of the risk of sudden death must be carried out. It currently consists of a binary selection that identifies the low and high-risk forms, knowing that zero risk is probably doesn’t exist and the sudden death incidence remains not clear in forms at high risk.

Characteristics taken into account to quantify the risk of an anomalous origin of coronary artery

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*Lesion > 50%

For the anatomical forms considered benign, a therapeutic abstention is of course rule, unless an associated atheromatic disease requires a gesture of revascularization. For risked Anatomical forms, it must recognize the current lack of consensual attitude. The surgical indica
Introduction: The myocardial performance index (Tei) provides information on both ventricular diastolic and systolic functions. It is of great utility in substitution or in addition to other echocardiographic parameters in litigious situations or when the echogenicity of the patient is limited. Studies are controversial as to the reliability and contribution of conventional Doppler and tissue Doppler (TDI) measurements, even though they have the advantage of being on the same cardiac cycle and independent of heart rate variations.

Methods: Our population consisted of 84 patients (mean age = 56.2 ± 13.7 years, 81% male) hospitalized for troponin-positive acute coronary syndrome (ACS). Cardiovascular risk factors in our population were: smoking (79.2%), diabetes (29.2%), high blood pressure (33.3%) and dyslipidemia (14.6%).

Tei index was routinely used to evaluate their overall myocardial performance. The left Tei index was evaluated at conventional Doppler (Tei1) after recording mitral and subaortic flow, TDI at the lateral mitral annulus (Tei1'lat) and at the septal mitral annulus (Tei1'sept). The right Tei index was evaluated at conventional Doppler (Tei2) by recording tricuspid and pulmonary flow and TDI at the lateral tricuspid annulus (Tei2').

The correlations were studied using the Pearson correlation coefficient (PPC), the values of which are as follows: CPP Tei1 - Tei1'sept = 0.38, p = 0.02, CPP Tei1 - Tei1'sept = 0.67, p <0.001, CPP Tei2 - Tei2' = 0.61, p = 0.001.

Results: The mean left ventricular ejection fraction (LVEF) in our population was 46.9 ± 10.7%, the left Tei index at TDI at the septal mitral annulus was the best value correlated with LVEF. The reliability of this parameter was also superior to the other two left Tei indexes.

Conclusion: In ACS patients, the left Tei index measured at TDI at the septal portion of the mitral annulus was in our experience the most reliable and best correlated measure with LVEF. This parameter is used in routine to evaluate the overall performance of LV even in patients with low echoes and in the emergency context. Its prognostic value remains to be determined.
Introduction: Polycythemia Vera is a myeloproliferative disorder characterized by an increased risk of bleeding and thrombotic events. Myocardial infarction remains the leading cause of death in these patients. Certain thromboembolic or hemorrhagic complications related to the coronary revascularization technique have been reported in the literature.

Case report: We report a case of a 58-year-old patient with acute coronary artery syndrome STEMI in anterior territory, thrombolysis was made by Tenecteplase. A true polycythemia was found in blood samples with hemoglobin at 21g / dl and mutation V617F JAK2 gene and low erythropoietin levels.

The coronary angiography showed a thrombotic subocclusion of LAD, the fact that there is an hypercoagulability context the decision of thromboaspiration and not to stent the guilty lesion was taken after a multidisciplinary discussion (cardiologist, hematologist, interventional cardiologist and cardiovascular surgeon) with a good angiographic final result.

The patient received a cytoreductive therapy based on bleeds and hydroxyurea. The patient leaved hospital on the 10th day of admission and treated with Hydroxyurea 1500 mg per day, aspirin 100 mg per day.

After one year of follow-up, no hemorrhagic or thromboembolic events are noted.

Conclusion: Complexity in the management of ACS STEMI on polycythemia Vera disease background is a true challenging situation, where the balance “thrombotic risk – hemorrhagic risk” must be taken into consideration. Multidisciplinary management can improve the management and decision-making pathway in these patients.
Hypercholesterolemia in children: premature cardiovascular risk

Left Main Coronary Angioplasty in a 10-Year-Old Boy With Familial Hypercholesterolemia

**Introduction:** Familial hypercholesterolemia is the most common genetic disorder in childhood. High levels of low-density lipoprotein cholesterol are present since the child’s birth and this fact will suppose silent development of early atherosclerosis. In cases of homozygous, the coronary disease will appear before 20s. Actually, it is topic of discussion that it is necessary to achieve therapeutic goals from an early age to improve prognosis.

**Clinical case:** We report the case of a 10-year-old boy, born of consanguineous marriage, presented with a 4-month history of exertional angina, dyspnea (NYHA class III) and an episode of syncope. The parents had noticed xanthomas at his elbows and ankles 3 years prior. At that time, he was diagnosed to have homozygous familial hypercholesterolemia and treated with diet and gemfibrosil.

A family history of chest pain and sudden deaths was obtained (2 brothers had similar complaints and expired undiagnosed at the age of 9 and 11 years). His complaints were ignored by his parents, until he had chest pain, palpitations and syncope, at that time he consulted.

On examination his blood pressure was 100/50 mmHg. he had xanthelasma and multiple xanthomas over wrist, hands, knees and elbows. Cardiovascular system examination revealed no signs of heart failure. The murmur was normal. The peri-critical electrocardiogram revealed sinus rhythm with an elevation of ST segment in lead avR with ST segment depression in anterior leads. The chest X-ray was normal. Laboratory examination revealed an elevated cardiac markers MB-CPK and Troponin. The lipid profile revealed low density lipoprotein (LDL) of 23 mmol/L and triglyceride of 10 mmol/L. The echocardiography revealed normal valves and normal left ventricular function (ejection fraction 60%) with anterolateral hypokinesia, coronary angiogram revealed mid LMCA (70%) stenosis, and a stenosis of the origin of RCA.

In view of her symptoms and abnormal lipid profile a diagnosis of familial hypercholesterolémia with premature atherosclerotic CAD was made. Medical management with statins, beta blocker and dual antiplatelates (aspirin 75 mg an
Background: Bacterial pericarditis is a rapidly progressive infection sown with a heavy mortality. It usually occurs as a secondary infection to either a contiguous or hematogenous spread from distant focus of infection. Primary involvement of the pericardium without evidence of underlying infection elsewhere is very rare. We present a unique case of a 69-year-old patient who was diagnosed as having purulent acute bacterial pericarditis caused by Streptococcus pneumoniae revealing an underlying Squamous cell lung carcinoma in the cardiology department of IBN ROCHD University hospital of Casablanca.

Case presentation: It is about a 69-year-old man presenting with a sudden onset pleuritic chest pain, dyspnea, fever and cough productive of mucoid sputum admitted for pericardial effusion of great abundance in tamponade. The patient underwent an emergent pericardiocentesis. The pericardial fluid was purulent, exudative, non-malignant, and cultures revealed Streptococcus pneumoniae which was susceptible to penicillin and ceftriaxone. An etiological radiological assessment was done showing a solitary round lesion in the right lower lobe of the lung. Bronchoscopy with bronchoscopic lung biopsy and brushing revealed a squamous cell carcinoma. Afterward the patient underwent a pericardiectomy with drainage. He was successfully treated with intravenous adapted antibiotics with good recovery.

Conclusions: Most pericardial effusions in cancer patients are related to their malignancy, either due to direct metastasis or secondary physiologic effects. This case is a unique example of a lung cancer patient presenting with a pneumococcal pericardial effusion, which in itself is a rare phenomenon. This case report demonstrates the importance of recognition and early antibiotic therapy in patients presenting with pericardial effusion as this disease has a rapidly progressive fulminant course.

To our knowledge, this represents the second published case of purulent pericarditis with cardiac tamponade revealing a squamous cell carcinoma of the lung.
**Introduction:** The definition of very severe aortic stenosis (AS) based on peak aortic jet velocity (Vmax) remains unclear with a 5-m/s cutoff in US and 5.5 m/s in European guidelines. There are limited data regarding risk stratification based on Vmax in patients with severe AS. The aim of this study was to compare the clinical features and echocardiographic parameters in patients with Vmax >5m/s and <5m/s.

**Methods:** We achieved a prospective, single-centric study from October 2017 to January 2019, concerning patients followed for valvulopathies in cardiology department of Ibn Rochd University Hospital Casablanca, Morocco. We included all the patients with severe AS defined by a Vmax >4m/s, Gmoy >40mmHg, and AS <0.6cm/m². Our patients were divided into 3 groups: G1: Vmax 4-4,4m/s, G2: Vmax 4,5-4,9m/s and G3: >5m/s. We had no patient with Vmax >5,5m/s.

**Results:** 73 patients had AS and 34 of them (46 %) had severe AS. The mean age was 62,24 (+/-12,08 ) and sex ratio 0,9. The number of patients was 17 in G1, 10 in G2 and 6 in G3. 66 % on G3 had Dyspnea >II NYHA vs 88 % on G1 and 2.16 vs 5% had angina , no one had syncopa in G3 vs one in G1 and 2 .No patient in G3 had left or right ventricular heart failure. Electrically, 77% on G1, 80% on G2, and 66% on G3 of patients were in sinus rhythm. 50 vs 33% on G3 had repolarization disorders. Left ventricular hypertrophy was found in 70% on G1 and 2 vs 50 % on G3. A Left ventricular dysfunction (LV) was found in 30% in the 3 groups by the Simpson Biplan method and right ventricular dysfunction in 10% in G1,2 vs 16% in G3 (p>0,001).

**Conclusion:** In our study Vmax >5m/s was not correlated to worse presentation, thought an other study is being achieved to assess the pronosis of this Vmax on long term morbidity and mortality.

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Introduction:
Cardiogenic shock is defined by a failure of the heart pump to ensure the needs of the body, and is an important cause of cardiovascular mortality, especially when it is of coronary origin. The clinical symptoms are hemodynamic, respiratory but also neurological.

The objective of our study is to study the prevalence of confusion among patients admitted to cardiogenic shock.

Material and methods:
We carried out a prospective, mono-centric study over a period of 18 months from January 1st, 2017 to June 1st, 2018, involving 22 patients admitted for cardiogenic shock in cardiac intensive care unit in the cardiology department of Ibn Rochd Hospital of Casablanca.

Results:
The average age of our patients was 65.14 years, with a sex ratio of 1.7, the origin of the cardiogenic shock was a coronary syndrome in 72%, mainly STEMI. The delay compared to the beginning of the pain was between 6 and 12h in 11.5% only. At admission, mean PAS was 77 mmHg and mean PAD 55mmHg, mean Fc was 102 bpm, 59% were in PAO and 9.1% had poorly tolerated arrhythmia. Neurological signs were present in 40.9% dominated by confusion. The patients were revascularized in 27% of cases but the prognosis was poor with a death rate of 86.4%.

Conclusion:
Cardiogenic shock remains a major public health problem in Morocco and a major cause of cardiovascular death. Hence the importance of implementing cardiogenic shock prevention and palliation measures and raising awareness about the early consultation period.

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Introduction: Often under diagnosed, pulmonary embolism (PE) remains a common and serious condition, clinical polymorphisms in case of underlying pulmonary disease are causing delays in management.

Methods: We performed a retrospective study of 120 patients hospitalized between 2016 and 2018 for acute pulmonary embolism in the cardiology department of CHU CASABLANCA which 22 patient with pulmonary pathology.

Results: A total of 22 patients, the predominance was female, the average age of patients was 54. The history of our patients was: COPD in 10 patients, PID (3 patients), DDB (3 patients), left cardiopathy in 8 patients, diabetes in 4 patients, and 5 patients had a history of deep vein thrombosis. Symptoms included worsening dyspnea in 96.8 % of cases, chest pain (40 %), hemoptysis (9%), shock (17%). All our patients benefited from thoracic imaging, which in addition to a positive diagnosis of pulmonary embolism, showed signs of sequential lesions of tuberculosis (8 patients), an emphysematous lung (5 cases), DDB (3 cases), a PID (2 cases), a tumoral process (4 case).

12 patients were admitted to the intensive care unit in a respiratory distress chart, all patients were on anticoagulant therapy and specific treatment for the underlying pulmonary pathology. The evolution was marked by the death of 5 patients (COPD and PID)

Conclusion: The severity of pulmonary embolism is closely related to the associated comorbidities including pulmonary, hence the benefit of a parallel management of both pathologies.
Introduction: Preeclampsia (PE) is the combination of pregnancy-induced hypertension (≥ 140/90 mmHg) and proteinuria greater than or equal to 300 mg per 24 hours above 20 weeks of amenorrhea. It usually disappears immediately after delivery in 24 to 48 hours. However, it can persist after placental evacuation and up to six weeks after delivery. Hence the importance of early diagnosis of persistent preeclampsia (PEEP) postpartum and detect signs of severity, in order to establish adequate driving in time.

Methods: This is a retrospective study of 547 cases of preeclampsia collected in the Gynecology and Obstetrics “C” department of Ibn Rochd Hospital, Casablanca, for a period of three years (2016 - 2018). Two groups were identified. A group 1 \( (n = 504) \) of patients with preeclampsia immediately disappeared in the postpartum and a group 2 \( (n = 43) \) of patients with persistent preeclampsia. We followed them before and after delivery.

Results: Persistent preeclampsia represented 8%. Mean age of our patients was 29.15 +/- 15.13 years, with a prevalence of 72% of the Patients aged between 25 and 35 years, while age > 35 years was a factor of disappearance of PPE. Factors related to the persistence of preeclampsia were mainly pauciparity in 61%, history of PE in 4.7%, gestational age < 36 weeks in 56%, severe preeclampsia in 14.7%, hypotrophy in 6% and eclampsia in 2%, and massive 24 hours proteinuria ≥ 3mg / 24h in 60% (all \( p \) were <0.001%) in comparison with the group 2. The clinical examination showed a blood pressure > 160/110 mmHg in 20.4%, a SBP > 170 mmHg in 13%, and DBP > 110 mmHg in 9%. Edema was present in 70% of cases and was generalized in 9% of cases. The vaginal delivery was done in 44% of cases, Caesarean section was recommended in 56% of cases. Conservative treatment was adopted in 22% of cases; 15.05% required immediate use of intravenous antihypertensive treatments.

Conclusion: Preeclampsia is still common in developing countries. It remains a major cause of maternal and fetal morbidity and mortality. Our study confirms the seriousness of persistent pre-eclampsia, which carries a high risk of maternal complications (eclampsia, acute renal failure, cytolysis, etc.) and maternal mortality, which can be reduced at the cost of a better detection and treatment policy.
Introduction: In most developing countries, the rheumatic mitral stenosis sequelae of acute rheumatic fever is one of the first affections of the young adult. The aim of our study was to identify the particularity clinical and echocardiographic of rheumatic stenosis in men.

Materials and Methods: We report the results of a prospective study, conducted at University Hospital cardiology department Casablanca, from October 2017 to October 2018, which included 65 patients with a severe MS. We compared 2 groups: Group I (men), Group II (women). The study analysis was made by SPSS Version 20 software.

Results: We compiled two groups: 20 men (30.7%) (group I) and 45 women (69.3%) (group II). The average age of women was 30 years compared with 42 years for men. The comparison of clinical data (history of rheumatic fever, throat repeatedly, stage dyspnea, palpitations) revealed no significant difference, by against there is a higher incidence of electrical hypertrophy left atrial in group I (p<0.001).

Regarding echocardiographic data, in men, the left atrium was more dilated (p: 0.06), mitral surface was tighter (p: 0.08) and the dilatation of right ventricular was more common (52% vs 30% with p: 0.036). the calcifications of the mitral valve and the shortening of the device under valvular are found in 75% of the men against 55% of the women (p: 0.09). There was no significant difference in the mean gradient and the therapeutic indication.

Conclusion: Our study suggested that the MS in men, is tighter with more impact on the size of the left atrium as well as that of right ventricular, without valvular anatomical difference and therefore no influence on the therapeutic indications.

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Introduction: Several studies have shown that a decrease in serum albumin level is associated with an increased risk of occurrence of a cardiovascular event and heart failure. In acute coronary syndrome, a decrease in serum albumin is generally associated with severe coronary lesions, increased long-term mortality, and the occurrence of heart failure. The aim of our study is to show whether the presence of such hypo albuminemia during admission to hospital for acute coronary syndrome is or is not a risk factor for the development of cardiac insufficiency de novo during hospitalization, as well as its precise impact on hospital mortality.

Methods: This is a retrospective study of 132 patients hospitalized for acute coronary syndrome in the cardiology department of CHU IBN ROCHD Casablanca between April 2016 and September 2017. Patients with heart failure were excluded. The patients were divided into quartiles (Q) according to their initial serum albumin level: Q1: <35.0 g / l; Q2: 35.1 to 38.0 g / l; Q3: 38.1 to 40.8 g / l; Q4: > 40.8 g / l.

Results: The mean age was 58 ± 11.2 years, with a clear male predominance (64.3%), the rate of hypertension was 39%, diabetes was 42.9% and smoking was 47%. The rate of onset of de novo heart failure (36%, 21.9%, 13.2% and 12.9% for Q1, Q2, Q3 and Q4 respectively, \( p < 0.0001 \)) and hospital mortality (7.8%, 3.5%, 1.90%, and 1.2% for Q1, Q2, Q3, and Q4, respectively \( p < 0.0001 \)) were significantly higher when albumin levels were lower.

Conclusion: In patients with ACS, an initial serum albumin level <35.0 g / l is a predictive criterion for de novo heart failure and hospital mortality. In this clinical situation, hypoalbuminemia would reflect the presence of an underlying inflammatory state.

English Title
Is the presence of an initial hypo albuminemia at the admission for an acute coronary syndrome of bad prognostic?

Category
Acute Coronary Syndromes

English Abstract

Introduction: Several studies have shown that a decrease in serum albumin level is associated with an increased risk of occurrence of a cardiovascular event and heart failure. In acute coronary syndrome, a decrease in serum albumin is generally associated with severe coronary lesions, increased long-term mortality, and the occurrence of heart failure. The aim of our study is to show whether the presence of such hypo albuminemia during admission to hospital for acute coronary syndrome is or is not a risk factor for the development of cardiac insufficiency de novo during hospitalization, as well as its precise impact on hospital mortality.

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Conclusion: In patients with ACS, an initial serum albumin level <35.0 g / l is a predictive criterion for de novo heart failure and hospital mortality. In this clinical situation, hypoalbuminemia would reflect the presence of an underlying inflammatory state.
Introduction: Among congenital coronary artery anomalies (CAA), the single ostium coronary artery (SOCA) is a very rare angiographic finding (0.044%). And may be culprit of multiple clinical signs as angina, arrhythmias and sudden death. Coronary computed tomography angiography (CCTA) is important for characterization of coronary anomalies complementing coronary angiography. Lipton classification is made to classify these coronary anomalies, and the RIII pattern in which anterior left anterior descending coronary artery (LAD) and left coronary circumflex (LCX) comes from a unique trunk in right coronary sinus is known to be rare (0.004%).

Case report: We present the case of a 66-year-old Moroccan female with a history of hypertension, diabetes type 2 and hypercholesterolemia who presented with worsening chest pain, presented to cardiologic intensive care unit. The patient reported complaints of typical effort angina few months prior to presentation, which progressed to become at rest, associated with NYHA II dyspnea. Vital signs were stable, Trans-thoracic echocardiography was normal with no segmental wall-motion abnormalities, and a good right ventricular function. Troponin I levels were normal in 2 determinations by 6h hours interval. The patient went to catheterism laboratory for invasive coronary angiography. Selective coronary angiography demonstrated a SOCA originated from the right coronary sinus, giving birth to a single short trunk bifurcating early to give the right coronary artery (RCA) and the left circumflex artery (LCX). An ectopic left anterior descending artery (LAD) arise from the proximal part of the RCA. There was no significant atherosclerotic stenosis. The gated cardiac computed tomography (CCTA) confirmed these abnormalities and showed a pre-pulmonic, pre-pericardial course of the ectopic LAD and an anomalous retro aortic course of the LCX with no myocardial course.

Medical management was sufficient to control clinical signs during hospital course. However, we consider additional diagnostic stress imaging to evaluate if angina recurs during the follow up in this patient.

Conclusion: Among the wide spectrum of congenital abnormalities of coronary arteries, this case of SOCA Lipton type R-III pattern remains extremely rare, and cardiologists should be aware of this rare condition.
Background: Pulmonary embolism (PE) is a major cause of morbidity and mortality. With careful risk stratification, clinicians should be able to perform systemic thrombolysis safely and effectively in most of these patients. Systemic thrombolysis is indicated in patients with hemodynamically unstable PE, as their potential benefits will almost certainly outweigh the risk of a life-threatening bleed.

Methods: Retrospective analysis of PE patients, treated in cardiology department (A) and anesthesiology Department, was performed. Patients admitted with hemodynamic instability or that developed intrahospital cardiogenic shock and thrombolysed was analysed.

Results: Three hundred patients were included for this retrospective analysis. 15 patients had cardiogenic shock (5%) were thrombolysed. The major symptom was dyspnea (93%), more than half patient (53%) had right bundle branch block at admission and S1Q3 aspect was present at 73% of cases. Pulmonary hypertension was depicted at echocardiography at 53% of patients, 80% of patients thrombolysed had right congestive heart failure. The majority of patients (87%) in cardiogenic shock had proximal involvement at pulmonary angioscanner, then intrahospital mortality raised at 73% of patients thrombolysed.

Conclusion: Despite current options for the management of patients with acute PE, especially those with hemodynamic instability and RV dysfunction, mortality rates remain high. Patients with submassive PE are more challenging, and clinicians must carefully evaluate their clinical trajectory, comorbidities, and bleeding risk before administering thrombolytic therapy.

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Authorisation: I agree that the email addresses provided may be used in sending emails related to the Cardiovascular field including our Editors’ Choice and reviewer invitations etc.
Introduction: Despite improvement in diagnosis and management, mitral regurgitation (MR) remains associated with high morbidity, serious complications. Therefore we decided to focus on elderly population with mitral regurgitation and renal dysfunction.

Aims: The aim of this study was to study clinical characteristics and assess renal dysfunction, impact on mortality and determine risk factors associated to poor prognosis.

Materials: This is a single centric prospective study, from October 1st, 2017 to January 1st, 2019, the recruitment of patients is effected from valvular echocardiogram consultations and hospitalizations in intensive care unit of cardiology in university hospital ibn Rochd in Casablanca, Morocco.

We included patients with 65 years or more, with MR isolated or associated with another valvulopathy and renal function defined by levels of serum creatinine and GFR calculated by CKD-Epi method in initial consultation. We divide 2 Groups with MR in elderly G1 with good GFR >60ml/min/m² and G2 <60ml/min/m², we excluded patients with MR in shock or with acute renal injury due to other cause.

Results: 58 patients were included. The average age is 74±6.4 years, sex ratio was 0.48, and predominant CV risk factor were diabetes mellitus, hypertension and smoking.

Dyspnea II, III, IV NYHA respectively was 22.4%, 69% and 8.6%, correlated with MR severity (p=0.028), Angina was present in 5.2%, and palpitation in 10%. AF was observed in 15% cases.

Mean serum creatinine 1.00±0.46 mg/dL, and median GFR was 81ml/min/m².

MR was isolated in 34 cases, main mechanism was rhumatismal in 29.3%, severe MR was observed in 20.7%, HFrEF , HFmEF in 7 and 14 cases respectively, with mean SGL at -16.6±4, LV and LA dilatation observed in 31 and 42 patients respectively with no significanation between 2 groups.

LA volume was correlated with renal dysfunction 51 ± 12 mL/m² in G2, and 42 ml/m² in G1 patients (p=0.01 OR 1.2, [1.05-1.3]. PAH in MR was present in 50% in G1 versus 38% in G2 (p=0.08).

A follow up in 6 months showed aggravation of MR grade in (3.4% in G1 and 8.6% in G2 (p=0.06) and at 12 months 5.2 % in G1 and 17.2% in G2 (p=0.025). 4 patients who died during follow-up in G2 despite optimal medical treatment.

Conclusion: Few studies were interested to study renal function in patient with MR in elderly, in our series, lower GFR was significantly correlated to MR grade progression, and an independent mortality prognostic factor.

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**Introduction:** Inflammation is a major component of the response to tissue injury caused by myocardial infarction. C-reactive protein (CRP) levels might be a simple marker of the severity of this inflammatory response, providing prognostic information. The aim of this study is to clarify the correlation between CRP elevation and prognosis of acute coronary syndrome.

**Material and methods:** We performed a retrospective study of 170 patients hospitalized between May 2018 and October 2018 for acute coronary syndrome in the intensive unit care in the cardiology department of IBN ROCHD Casablanca. These patients were divided into 2 groups: 120 patients with CRP >5mg (GI) and 50 patients with CRP <5mg (GII).

**Results:** The average age was 61±12 years old. Sex ratio (M/F) is 2.1. The main risk factor found was tobacco (50% of patients). 8% of cases had a history of coronary artery disease. Angina was found in 80% of cases. 16% of the cases were complicated with IVG killip II of which 70% of the cases in the group I. 23.5% of the patients had a LVEF ≤35% of which 80% with CRP >5 mg. At the coronarography, the multi-troncular lesions were found in 60% of cases of group I vs 26% of group II. Intra-hospital mortality and at 3 months of follow-up was higher in group I compared to group II.

**Conclusion:** Our results demonstrate a strong association between CRP obtained on admission and in-hospital mortality after Acute Coronary Syndromes. It suggests that CRP can be a marker of inflammatory response to myocardial ischemia, providing prognostic information regarding the risk of death.
**Introduction:** Heart failure with preserved LVEF is an important cause of mortality and morbidity in hypertensive patients. A close correlation between the impairment of diastolic function and longitudinal systolic dysfunction could have several explanations. First, the diastole is a dependent energy process, especially during its first phase, it also includes active systolic components during the iso-volumetric relaxation phase. In addition, the achievement of intrinsic myocyte function is part of hypertensive pathology as evidenced by recent studies.

**Methods:** This work consisted on performing a full echocardiography study in a series of 111 hypertensive patients (25 to 75 years of age), including biplane Simpson LVEF, left indexed ventricular mass, the diastolic function, and finally the study of LV longitudinal deformation by the speckle tracking technique (GLS). Patients with secondary hypertension, leaking or stenosing valvulopathy, arrhythmia, history of coronary insufficiency were excluded from this study.

**Results:** Of the 111 hypertensive patients, 75 patients (67.5%) had diastolic function impairment, of which 20 patients (18%) had high filling pressures. 49.39% had echocardiographic hypertrophy of the left ventricle, almost all of these patients (20 patients) had a low GLS. There is a statistically significant relationship between the decrease in GLS and the elevation of left ventricular filling pressures in hypertensive patients. These results suggest that the increase in filling pressures is closely associated with the atrioventricular interaction in patients with hypertension, with a perfect correlation with the achievement of longitudinal systolic function and diastolic function.

**Conclusion:** In total, a linear relationship is found between left ventricular mass increase, diastolic dysfunction, and LV systolic dysfunction.

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**Article**

**English Title**  
Alcapa Syndrome

**Category**  
Clinical Case

**Topic**  
Other – Upload your slides or pictures illustrating the case – 22708.jpg, IMG20190325154158.jpg, IMG20190325154153.jpg, IMG20190325154148.jpg

**English Abstract**

**Introduction:** The ALCAPA pathophysiology consists of a relative coronary steal, which promotes low oxygenation in the left myocardial tissue as a consequence of blood flow from pulmonary artery which leads to myocardial ischemia and acute myocardial infarction.

**Case presentation:** We report the case of a 15 years-old patient with history of retrosternal pain during exercise and paroxismal tachycardia. The echocardiography suspected diagnosis by showing a dilated right coronary artery, the left ventricle dilated and regurgitant flow in mitral valve, we confirmed the diagnosis with coronary computed tomography and coronarography, we refer the patient to a cardiac surgeon and the operation consisted of pulmonary artery wall and bovine pericardial construction of a new duct, which connects the left main coronary artery re-establishing a normal anatomical situation and permitting a physiological blood flow to left ventricle.

**Conclusion:** ALCAPA syndrome, also known as Bland-White-Garland Syndrome, is a rare congenital heart disease, If we don’t treat it, 90% of patients die during the first year of life, due to myocardial ischemia and heart failure and its treatment is a real surgical challenge in the adult population.

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Introduction: Marfan syndrome is an autosomal dominant genetic disorder that affects connective tissue and is caused by mutations in the fibrillin 1 gene present at chromosome 15. Aortic aneurysm is its main complication, and along the dilation of the aorta root and its descending portion (60–100%). Congenital coronary artery fistula is a rare coronary artery anomaly. Its association with Marfan syndrome is not known, and there is no previous report in the literature. We describe here a case of a male with Marfan syndrome diagnosed with left anterior descending artery fistula drained in the left internal mammary artery.

Case presentation: A 19 year old male with a history of Marfan Syndrome diagnosed in childhood without reports of previous complications related to the disease has been referred to our department for annual check. The diagnostic criteria of Marfan Syndrome based on revised Ghent-2 nosology, was ectopias lentis and systemic score >7 points in a patient with positive family history. Transthoracic echocardiogram showed dilated aortic root measuring 50 mm, tri-leaflet aortic valve with aneurysmal dilatation of all three coronary sinuses of valsalva. There was no aortic valve regurgitation. Left ventricular systolic performance was correct with a normal ejection fraction estimated at 63% without any wall motion abnormalities and a moderate left ventricular dilation. There was no right ventricular dysfunction. Trace tricuspid regurgitation and trace pulmonary regurgitation indicated normal right ventricular pressures and pulmonary artery pressures.

Thoracic CT angiography demonstrated a dilation of the root of the ascending aorta among sinuses region. Aortic measurements were 40 mm for the aortic orifice, 50 mm x 44 mm for the valsalva sinus, 39 x 38 mm for sino aortic junction, 29 mm for the ascendant aorta.

The aortic arch, the supra aortic trunk and the descending aorta have no significant anomalies. There was an image of coronary artery fistula between the left A Fig 1.

Conclusion: The combination of Marfan Syndrome with coronary artery fistula like the one described in this case is uncommon. Therefore, close follow-up with the use of modern technology and prophylactic medical treatment significantly reduces morbidity and mortality in Marfan’s syndrome.
Introduction: Coronary artery disease, including the acute coronary syndromes (ACS) of unstable angina, non–ST-segment elevation myocardial infarction and ST-segment elevation myocardial infarction, is the most common cause of heart failure (HF). Conversely, heart failure is a frequent complication of ACS and significantly worsens the prognosis of patients with ischemic heart disease. Owing to the strong association between ACS and HF, it is important to understand the determinants of HF in patients hospitalized with ACS. The aim of this study is to evaluate the determinants and impact on outcomes of HF complicating ACS.

Material and methods: We performed a retrospective study of 170 patients hospitalized between May 2018 and October 2018 for acute coronary syndrome in the intensive unit care in the cardiology department of IBN ROCHD Casablanca.

Results: The average age of our patients was 61 with extremes of 32 and 81 years. There is a predominance of male sex (67.6% of the population). Tobacco was the main risk factor (50%) followed by high blood pressure (32.3%) and diabetes (30%). Coronary hereditis was found in 8.2% of our patients. HF was diagnosed in 18.8% of cases. The identified factors associated with its occurrence were advanced age, extensive electrocardiographic impairment, and comorbidities such as infections, anemia, and renal failure. The HF was a predictor of mortality ($p<0.001$).

Conclusion: This analysis shows that HF is a common and ominous complication associated with all forms of ACS. It also suggests that patients with ACS and HF are undertreated. A more aggressive treatment should be recommended in this group of patients to improve outcomes.
Introduction: Mild cognitive impairment causes cognitive changes that are serious enough to be noticed by the individuals. Approximately 15 to 20 percent of people age 65 or older have MCI. This impairment may increase the risk of cardiovascular events.

Purpose: Few studies have shown the impact of altered mental status on mortality and CV events. Even less in elderly with valvular heart disease.

Materials: We made a monocentric prospective study for 12 months, data collected at the echolab and consultations among patients with valvular disease.

To assess mild cognitive impairment (MCI) we have used the Mini Mental Status Evaluation which is a 30-point questionnaire that is used extensively in clinical and research settings.

After exclusion for neurological problems, psychiatric disorders, we defined MCI by MMSE<24.

We compared 2 groups of patients G1 <70 years and G2 >70 years who were eligible to study.

Results: 86 patients were included, 48 in G1 and 38 in G2, mean age was G1 58±7 vs G2 78±5 years.

MCI was correlated with female gender (54% vs 35% p=0.03), low education state (10% vs 35% p=0.001). AF was present in 5% in G1 vs 12% in G2, and heart failure (HF 22% vs 37% p=0.035).

Mitrail stenosis was identified (20% vs 17%), MR (10 % vs 12 %), LVEF>50% in (80% vs 65%), PAH in 38% each group, whereas aortic stenosis was significantly associated with MCI in second group of elderly patients (5% vs 12% p=0.04). The medical therapy were similar between 2 groups.

Mortality and rehospitalization in 3 months were higher in G2 of (3.6% vs 12%, p=0.01 and 20% vs 36%, p=0.002).

Conclusion: Routine assessment of MCI should be done in elderly with valvular heart disease specially population with AS. A specific management of such high-risk patients should be considered.

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Introduction: The metabolic syndrome (MS) is an emerging entity that groups together in the same person several metabolic abnormalities that predispose each to cardiovascular risk. From an epidemiological point of view, its prevalence varies according to country and ethnicity. However, in hypertensive patients, cardiovascular diseases are the main cause of mortality, the prevalence of MS is poorly known.

Objective: To estimate the prevalence of MS and its associated factors in a sample of patients with high blood pressure in a Moroccan population.

Methods: Cross-sectional study involving 221 patients with arterial hypertension (> 20 years). The following measures were performed: blood pressure; Body mass index (BMI); Plasma glucose and lipid levels. Blood pressure criterion: mean systolic blood pressure >140mmHg and / or diastolic blood pressure >90mmHg; And the diagnosis of metabolic syndrome is retained according to WHO criteria and NCEP-ATP III criteria.

Results: 221 hypertensive patients were analyzed of which 80.53% were women and whose mean age was 60 ± 10 years. The prevalence of MS was 69.11%, mainly among women. Central obesity was the most common component of MS, accounting for 72.39% of patients (12.3% of men and 87.7% of women). Among the other components, low HDL-C was present in 66.51% (20.67% of men and 79.33% of women), hyperglycemia in 70.13% (16.28% of men). and 83.72% of women) and high triglycerides in 67.42% (20.81% of men and 79.19% of women).

Conclusion: The prevalence of metabolic syndrome is high in patients with high blood pressure. This highlights the importance of routine screening of hypertensive patients for other risk factors for cardiovascular disease.

English Title
Prevalence and related factors of metabolic syndrome in hypertensive patients in a moroccan population

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Background: Risk stratification in acute pulmonary embolism (PE) is essential for identification of patients having poor prognosis. We aimed to investigate the ECG modifications such as the presence of right bundle branch block (RBBB) and SIQIII-type patterns for risk stratification in acute PE.

Methods: Retrospective analysis of PE patients, treated in cardiology department (A) and anesthesiology Department, was performed. Patients with RBBB and/or SIQIII-type were compared with those without both patterns. Logistic regression models for association between these ECG alterations and respectively right ventricular dysfunction (RVD), high-risk PE status were analysed.

Results: Three hundred patients were included for this retrospective analysis. 110 patients (36.6%) had RBBB, and 70 (2.3%) had SIQIII-type patterns, more over 53% of patients having SIQIII pattern had RBBB. the presence of RBBB is significantly associated with the presence of thrombus in right ventricle (72%), right congestive heart failure (42%) and right ventricular dysfunction mostly when associated with SIQIII patterns. Cardiogenic shock is observed in 54% of patients having RBBB, then intra hospital mortality rised at 52% in patients with RBBB associated to SIQIII patterns. More than half patients (53%) had proximal involvement at pulmonary angioscanner when RBBB is present at ECG.

Conclusion: RBBB and SIQIII-type patterns were both associated with RV overload and cardiac injury. New-onset RBBB is likely to increase right heart failure, cardiogenic shock and intra hospital mortality. These finding suggest the importance of the RBBB and SIQIII pattern as important criteria in risk stratification of PE, that must be included in the new score stratification at the future international Guidelines.

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Background: Coronary heart disease has been mainly considered as men’s disease. However, it is the leading cause of morbidity and mortality in women worldwide. In this study, we aimed to determine the clinical profile and angiographic outcomes in women following primary percutaneous coronary intervention (PCI) for ST elevation myocardial infarction (STEMI).

Methods and patients: We retrospectively included 352 patients admitted for STEMI and managed with PCI. They were enrolled between January 2000 and March 2017 in Cardiology B department of Fattouma Bourguiba university hospital.

Results: Among 352 patients, 56 were women (15.9%). They were older than men, mean age was 66.5 ± 10 years versus 58 ± 11 years. Females had higher incidence of essential hypertension (55.4% vs 24.7%; p<0.001), diabetes mellitus (44.6% vs 30.4%; p=0.037), and dyslipidemia (12.5% vs 10.8%; p=0.012). Smoking and history of coronary disease were more prevalent in men (p<0.001 and p=0.024 respectively). Women had longer door to balloon time (p=0.004). Anterior wall myocardial infarction was more represented in women population (62.5% vs 47.3%; p=0.020), but no significant difference was observed in the incidence of initial or post procedural cardiogenic shock. Women were more likely to have multivessel disease (17.9% vs 10.8%; p=0.01), initial reduced TIMI flow (78.6% vs 70.3%; p=0.04), no reflow (21.4% vs 11%; p=0.033) and per procedural coronary dissection (12.5% vs 6.8%; p=0.013). In hospital mortality rate was higher in female population (23.2% vs 9.8%; p=0.005). In multivariate analysis, female sex was not an independent factor of in hospital death.

Conclusion: We conclude that STEMI in women remains a serious pathology. Its particularities must be better known and studied in order to optimize their management and prognosis.
Introduction: High blood cholesterol (TC) and triglyceride (TG) levels should be measured when admitting patients with acute coronary syndrome (ACS). However, few data have examined the predictive performance of these tests in our center.

Methods: The study included 98 patients (63 men and 35 women aged 59.9 ± 12 years) diagnosed with ACS. Unfortunately, lipid data from 14 patients was lost.

We analyzed 2 groups of patients: Group1 (n = 28) defined by lipid abnormalities at admission (CT> 2 g / L, HDL cholesterol >0.65, LDL cholesterol >1.8 or TG> 2g / l). Group 2 (n = 56) defined by normal values of lipid parameters.

Lipid profiles and glucose values were collected on days 1 and 4 at the onset of myocardial infarction. We compared their cardiovascular risk factors (CVRFs), left ventricular ejection fraction (LVEF) and less than 3 days after admission, CRP , troponins, and intra-hospital and one-year mortality.

Results: Compared to group 2, patients in group 1 tend to be younger (57.8 years vs 61 years), more often with hypertension (54% vs 41%), more diabetics (50% vs 37.5%), more dyslipidemias (14.28% against 1.25%) but fewer chronic smokers (35.7% versus 60.7%).

LVEF was not significantly different in both groups.

Troponin I (50.9 vs 17.82 ng / ml) and CRP (81.3 vs 45 mg / l) were higher in group 1. Lipids tended to decrease on post-phase. No difference noted in the objective of intra-hospital mortality. At 1 year, 13% died in group 1 compared to 0% in group 2.

Conclusion: Lipid levels decreased during the first few days of admission. We found differences between cardiovascular risk factors, troponin and CRP values. Patients with increased lipid counts on admission, have poor prognosis at one year.

Keywords: Serum lipids, lipid levels, cholesterol, triglycerids, acute coronary syndrome, admission, prognosis, outcomes.
Background: Obesity is associated with many cardiovascular risk factors that could trigger venous thromboembolism such as venous stasis and decreased mobility. Its prevalence is rapidly rising in developed countries and across the world. It has been demonstrated as an independent risk factor of pulmonary embolism (PE). However, only few studies have studied this parameter as a prognostic factor in PE. We suggested that obesity would be associated with a worst clinical presentation, echocardiographic parameters, prognosis and mortality.

Methods: This is a prospective study conducted on 120 patients admitted in cardiology intensive unit care at IBN ROCHD University Hospital of Casablanca, Morocco for PE between January 2016 and December 2018. We divided our patients into Group 1 with obesity: BMI >30kg/m², and group 2 without obesity<30g/m². We compared clinical features, echocardiography characters and prognosis.

Results: Mean age was 54,3 +/-16,77, sex ratio =0,3. G1 represented 28%. Clinically, 56% in G1 vs 43% in G2 had dyspnea, 20 vs 10% oedema,12 vs 2% hemoptyisis and 10 vs 3% signs of cardiogenic shock (p<0,001). Rythm disorders were not more frequent than in G2. Diagnosis was assessed by echocardiography and thoracic angioscanner. An intracavity thrombus was found in 8% vs 2%, right ventricular dysfunction in 24 vs 15% (p= 0.016) . Paradoxal septum and Pulmonary hypertension occurred in more than 56% of G1 vs 34% in G2 (p=0,004). Thrombolysis was used in 4% of G1 and not done in G2 (p<0.001). Treatment with non fractional heparin and oral anticoagulation was initiated in all the other patients without any difference between the two groups. Mortality occurred in 3% of G1 vs 1% of G2 (p>0.01)

Conclusion: In our study, patients with obesity were more symptomatic, had more echocardiographic signs of pulmonary embolism and presented more cardiogenic shock than the group without obesity. However mortality was not significantly more important.
Atrial fibrillation (AF) is a common finding in patients with severe mitral stenosis requiring Balloon Mitral Valvotomy (BMV). Its immediate and long-term prognosis remains controversial. We sought to evaluate the effect of AF on the immediate and long-term outcome of patients undergoing BMV. The immediate procedural and the long-term clinical outcome after BMV (between 1988 and 2017) of 258 patients with AF were collected and compared with those of 659 patients in normal sinus rhythm (NSR). Our data support the fact that patients with AF have worse immediate and long term outcomes after BMV. Post BMV area <2 cm², procedural complications and dyspnea predict adverse events during follow up.
Introduction: Behcet’s disease is a systemic vasculitic syndrome with a variety of clinical manifestations. They are rarely associated with this disease, and can be associated with fatal complications. We report an exceptional case of isolated coronary artery aneurysm with severe stenosis in a patient with Behcet’s disease, treated surgically.

Case Presentation: This case describes a 33-year-old man with Behcet’s disease, and no cardiovascular risk factors, who was admitted to the department of cardiology for chest pain since 2 days. Electrocardiogram showed an antero-septo-apical ST-segment elevation. Trans-thoracic echocardiography was suggestive of a large spherical mass adjacent to the lateral wall of the left ventricle, with normal left ventricular systolic function. Thoracic computed tomography scan confirmed that the mass was a non-ruptured aneurysm of the proximal left anterior descending artery measuring 40 × 60 mm and compressing the pulmonary artery, without dilatation of the aorta. Coronary angiography showed an aneurysmal dilation of the proximal segment of the left anterior descending artery followed by a severe stenosis. The aneurysm measured 3 cm of diameter. No other aneurysm or stenosis was detected. Figure (1), Figure (2) A bypass grafting of the left anterior descending artery using the left internal mammary artery was performed. Figure (3) Weaning from cardiopulmonary bypass was easy. Postoperative transthoracic echocardiography showed good cardiac function. The postoperative hospital course was unremarkable. He was continued on aspirin, corticosteroids, and immunosuppressive medication. The patient was discharged from hospital 4 days after surgery. Histopathological assessment of the excised aneurysm revealed an inflammatory cell infiltration suggestive of vasculitis. Three year regular follow up was uneventful with coronary CT scan showing LAD graft patency.

Conclusion: This case report highlighted the presence of giant coronary aneurysm, and stenosis in a patient with Behcet’s disease. Surgical intervention appears to be the treatment of choice for these aneurysms.
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**Introduction:** Pulmonary embolism (PE) is a severe and life-threatening. A previous study reported hypoalbuminaemia to be a modest predictor of increased VTE risk. To date however, the impact of hypoalbuminaemia on mortality in patients presenting with acute PE is unknown. The present study investigated the incidence and determined the prognostic significance of hypoalbuminaemia in patients with confirmed acute PE.

**Methods:** We performed a retrospective study of 120 patients hospitalized between 2016 and 2018 for acute pulmonary embolism in the cardiology department of CHU CASABLANCA. Patients were stratified into hypoalbuminaemia (<35 g/L) or normal serum albumin (≥35 g/L).

**Results:** Hypoalbuminaemia was present in 15 patients (15.5%) at one day and was associated with lower systolic blood pressure (100 ± 24 vs 130 ± 10 mmHg), higher mean heart rate (100 ± 18.9 vs 70.8 ± 17.4 bpm) lower arterial oxyhaemoglobin saturation (90 ± 3% vs 96 ± 3.0%), lower serum sodium (134.0 ± 3.7 vs 140 ± 2 mmol/L). Patients with hypoalbuminaemia had higher incidence of, historic of cancer (33.5% vs 23%) and chronic renal disease (8% vs 4%). Patients with hypoalbuminaemia had higher mortality at 30-day (12% vs 2%) and 90-day (23.2% vs 4.5%).

**Conclusion:** Hypoalbuminaemia is an independent predictor of mortality following PE and may improve risk stratification of patients in risk prediction models.

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Background: Coronary disease represent a major cause of morbidity and mortality worldwide. In this study, we aimed to determine biological factors predicting in hospital death following primary percutaneous coronary intervention (PCI) for ST elevation myocardial infarction (STEMI).

Methods and patients: We reviewed data from retrospective registry including 352 patients admitted in cardiology B department of Fattouma Bourguiba University Hospital from January 2000 to March 2017 for STEMI. All patients were managed by primary PCI.

Results: In hospital mortality rate was 11.9% in the overall population. It was higher in women (23.2% vs 9.8%; \( p = 0.005 \)). Its biological predicting factors in univariate analysis were: anaemia \( (p = 0.006) \), particularly severe anaemia with haemoglobin level below 8g/dl \( (p < 0.001) \), renal failure \( (p < 0.001) \), hyperglycemia (blood glucose level greater than 11mmol/l) \( (p < 0.001) \), leucocytosis (white blood cells count over 14.000/mm³) \( (p = 0.005) \) and platelet count over 250.000/mm³ \( (p = 0.037) \). In multivariate analysis, only renal failure and anaemia were independent predicting factors of in hospital mortality \( (p < 0.001) \).

Conclusion: In hospital mortality following STEMI remain high in the developing countries. Recognizing and understanding the biological risk factors of mortality after STEMI provide clinicians important information to determine prognosis.
Introduction: Dealing with patients operated of aortic coarctation who require another operation because a late complication at or near the coarctation site is challenging. Redo intervention of aortic coarctation is often associated with high post-operative mortality and morbidity. However, endovascular approach may be a less invasive therapeutic solution. The aim of this report was to demonstrate feasibility and safety of using Amplatzer Vascular Plug (AVP) device in the treatment of pseudoaneurysm resulting from surgical repair of a recurrent aortic coarctation.

Case report: We report the case of a 34-year-old patient with history of surgical repair of aortic coarctation at the age of 7 and hybrid repair at the age of 32. Nowadays, he presented chest pain and CT scan showed an endo-leak with restoring of aortic pseudoaneurysm by an 9 mm abnormal vessel. We performed successfully percutaneous embolization of this channel by deploying an Amplatzer muscular ventricular septal defect occluder. The angiographic result was satisfactory, and patient became asymptomatic. Six months later, CT scan showed no increase in pseudoaneurysm diameter without residual shunt. Percutaneous treatment of pseudoaneurysm locating can be safe and effective in high risk operative risk patient.

Conclusion: Amplatzer plug can be safely used in the treatment of recurrent aortic coarctation and specifically in pseudoaneurysm resulting from surgical repair.
**Introduction:** The combination of hypertension and diabetes is particularly common in elderly people. It is responsible for an increase in cardiovascular risk and can cause early damage to degenerative diabetes.

**Aim:** To study the epidemiological, clinical and biological characteristics of a population of patients with the association hypertension and diabetes.

**Methods:** Prospective and descriptive study, concerning 321 patients including 120 having the combination hypertension and diabetes and aged 65 years or older, followed in the cardiology department of IBN ROCHD University Hospital of Casablanca, from June 2015 to April 2017.

**Results:** The mean age of our patients was 68.3 ± 3.1 years, with a clear female predominance (89.3%). The diagnosis of diabetes preceded that of hypertension in 42.7%. 60% of patients had Grade I hypertension. Mean BMI was 28.1 ± 4.6 kg/m². Dyslipidemia was present in 56.7% of our patients with mainly hypo HDLemia (82%) and hyper LDLemia (57%). Macrangiopathy was found in 52% of patients dominated by the occurrence of ischemic heart disease in 32%. It was significantly more common in patients with LDL-c ≥ 1 g/l and hypoHDLemia. The microangiopathy was present in 73% of cases was significantly related to hyperglycemia, glomerular filtration rate and triglyceride levels.

**Conclusion:** The population of hypertensive and diabetic patients is a relatively frequent population exposed to cardiovascular complications, headed by ischemic heart disease, hence the interest of a full management from the moment of diagnosis of diabetes and hypertension to the prevention of cardiovascular risk and specific therapy.
Introduction: Thirty percent of deaths globally are attributed to coronary artery disease. Non-ST-segment elevation acute coronary syndrome (NSTE-ACS) is the leading cause of morbidity and mortality from cardiovascular disease worldwide (arrhythmias, heart failure, stroke and readmission). Our objective was to study the predictors factors of myocardial infarction (MI) at 1 month patients presenting in the emergency department (ED).

Method: Observational prospective study over 1 year. Inclusion of patients ≥ 18 years of age admitted to the ED for NSTEMI. All patients were contacted by telephone on the 30th day to inquire about the occurrence of IDM.

Results: Inclusion of 188 patients. The mean age was 61 ± 12 years with a sex ratio = 2. Medical history was (%): Hypertension (53); diabetes (43); coronary artery disease (31) of which 3% prior coronary artery bypass graf; dyslipidemia (12). The mean TIMI score was 3 ± 1 and the average GRACE score was 135 ± 37. Seventy-two percent had an ST sement elevation, 21% negative T waves and 7% a block of left branch (BBG). Ten patients (5%) had an MI at 1 month. The 1-month mortality rate was 5.3%. The predictive factors for 30-day MI in multivariate analysis were (OR, p): patients on aspirin (14.2, 0.034), creatinine clearance <30 ml / min (7.8; 0.05), ST segment depression > 2mm (29.5, 0.003) and patients who take inhibitor of the conversion enzyme (15.5, 0.021).

Conclusion: Early risk stratification in routine clinical practice has been an important milestone in the management NSTEMI syndromes in emergencies. Many risk factors influence the prognosis and evolution of this pathology.

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Introduction: The main etiology of mitral stenosis is rheumatic fever. There remains a significant problem in developing countries and persists also in developed countries despite a marked decline in prevalence in recent decades. It mainly affects young adults, however it changes clinical presentation in older patients with more altered valvular anatomy. The objective of this study is to analyze the particularity of the mitral stenosis in the Moroccan elderly over 50 years.

Materials and methods: We report the results of prospective study, conducted in Ibn Rochd Center of Cardiology from October 2017 to October 2018, which included 65 patients with a severe mitral stenosis, divided into 2 groups: Group I: 40 patients <50 years group II: 25 patients ≥50 years. Statistical analysis was performed on IBM SPSS Statistics 20.

Results: In our series there was a female predominance in the 2 groups (67% (GI) vs 64% (GII)). In patients over 50 years, the atrial fibrillation was more common (55% vs 67%) (p: 0.005), left atrium was more dilated (p 0.05 for the diameter of the OG, and p: 0.046 to the surface of the OG), average gradient was higher (p 0.044), the valves were more calcified (p<0.02), the history percutaneous mitral dilation was more frequent in group II (p: 0.009).

Conclusion: The mitral stenosis of elderly has more impact on the cardiac arrhythmia, the size of the OG, the severity of the gradient, and on valvular anatomy that is more calcified.

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I agree that the email addresses provided may be used in sending emails related to the Cardiovascular field including our Editors’ Choice and reviewer invitations etc.
Introduction: Coronary angioplasty is being increasingly performed in complex lesions of the unprotected left main (LMCA) coronary artery. An appropriate evaluation of left main lesion and the reference diameter of the LMCA is a fundamental step before stenting allowing an optimal choice of the stent size. The majority of African cathlab are not equipped with intracoronary imaging techniques.

Aim: To assess correlation between angiographic measures by automatic coronary quantification (QCA) and intravascular ultrasound (IVUS) evaluation of the LMCA reference segment.

Methods: We prospectively assess 38 patients with intermediate or ambiguous lesions requiring an additional evaluation by IVUS. All these patients have had a systematic measurement of the reference segment of LMCA by angiography using QCA and IVUS using quantitative coronary ultrasound (QCU).

Results: The mean age of the population was 57.4 +/- 10.4 years with a majority of men. Although strong correlation was found between reference diameters measured by QCA and those measured by QCU ($r=0.53; p<0.001$), a mean underestimation of the reference diameter by QCA of 0.44 mm was noted, with a wide margin of error varying between -0.61 and 1.49 mm.

Conclusion: The reference diameter of LMCA was underestimated by angiographic quantification compared to echographic assessment. This discrepancy should be taken into account when choosing the stent size for LMCA angioplasty.

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Introduction: Aortic coarctation or recoarctation in adulthood is now preferentially treated with percutaneous stenting. There are cases, however, where the percutaneous treatment is difficult and the surgery is required mostly because of unfavorable anatomy. In this case report, we present an aortic coarctation, mimicking an interruption of the aortic arch, treated successfully with percutaneous treatment.

Case presentation: We report the case of a 58 years old woman with a medical history of hypothyroidism under substitution treatment, which is known to have a coarctation of the aorta since the age of 19, but who was lost of sight since then. She has been recently followed up for three years for a grade 3 arterial hypertension that was well controlled under a dual antihypertensive therapy (zartan+ betablocker) at maximum tolerated doses. In order to update the anatomical state of her coarctation, a thoracic CT scan was performed showing a short isthmic diaphragm coarctation of the aorta of 6 mm diameter with a moderate post stenotic dilatation. On the echocardiography, we found a LV dilatation and hypertrophy (LVEDD=58mm, LVEDV=165mm, IVSED=12mm), with a normal contractile function (LVEF=65%), a moderate tricuspid regurgitation, an aortic isthmic coarctation with a maximum gradient of 30mmHg with a wide prolongation of anterograde blood flow during diastole. An angiographic exploration was then performed showing an extremely severe coarctation of the aorta with an intra-aortic gradient of 50mmHg. A percutaneous treatment was decided, a direct stenting was done. The maximum residual gradient was less than 10 mmhg. No complications occurred during the procedure and we have noticed a decrease in arterial pressure values.

Conclusion: We managed successfully by percutaneous treatment an uninhabitable form of a coarctation of the aorta that mimics an interruption of the aortic arch.
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**Introduction:** Prognostic assessment is important for the management of patients with acute pulmonary embolism (APE). Pulmonary Embolism Severity Index (PESI) and simple PESI (sPESI) are new emerged prognostic assessment tools for APE.

**Material and methods:** We performed a retrospective study of 120 patients hospitalized between 2016 and 2018 for acute pulmonary embolism in the cardiology department of CHU CASABLANCA. Risk stratification for the patients was performed using the PESI.

**Results:** 120 patients (mean age 54.3 ± 16.7 years, 77.5% female) with a confirmed PE were included in this study. For risk factors for thromboembolic disease, historic of cancer was present in 23.3%, immobility in 25%, oral contraception in 14%, obesity in 10.8%. Right ventricular dysfunction was assessed by echocardiography in 41.6%, with 66.7% with pulmonary hypertension. D-dimer was high in 60 patients (50%).

The Pulmonary Embolism Severity Index (PESI) score averaged 98 points. It was class I in 14 patients, class II in 31 patients, class III in 50 patients and class IV and V in 25 patients. 12 patients were transferred to intensive care units, of which 7 patients had a class IV PESI score. The progression was marked by the death of 3 patients with class V of PESI.

**Conclusion:** The PESI class was found to be significantly correlated with the mortality. Our data indicate that the PESI can be used to predict the prognosis of patients with pulmonary embolism and in making medical decisions regarding the treatment of patients with pulmonary embolism.

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Introduction: Haemodynamic alterations caused by acute pulmonary embolism (PE) may affect multi-organ function including kidneys. The aim of this study was to determine the prognostic of estimated glomerular filtration rate (eGFR) in acute pulmonary embolism.

Methods: We performed a retrospective study of 120 patients hospitalized between 2016 and 2018 for acute pulmonary embolism in the cardiology department of CHU CASABLANCA. We tested prognostic value of pre-specified eGFR level ≤60 mL/min/1.73 m² calculated on admission.

Results: 120 patients (mean age 54.3 ± 16.7 years, 77.5% Women) with a confirmed PE were included in this study. For risk factors for thromboembolic disease, historic of cancer was present in 23.3%, immobility in 25%, oral contraception in 14%, obesity in 10.8%. Right ventricular dysfunction was assessed by echocardiography in 41.6%, with 48.3% with pulmonary hypertension.

The eGFR level ≤60 mL/min/1.73 was present in 50 patients. Twenty – three patients died within the first 30 days after the diagnosis. The eGFR on admission was significantly lower in non-survivors than in survivors (59 ± 10 vs. 70 ± 7 mL/min/1.73 m², p < 0.0001). Independent predictors for a fatal outcome included: cancer, systolic blood pressure, older age, hypoxia, eGFR, heart rate and coronary artery disease.

Conclusion: The eGFR of ≤60 mL/min/1.73 m² not only independently predicted higher 30 day all-cause mortality. Therefore, eGFR calculation should be implemented in the risk assessment of acute PE.
Background: Primary angioplasty for acute myocardial infarction (AMI) is at least as effective as thrombolytic therapy in the general population. However, the influence of diabetic status on outcome after primary angioplasty remains to be determined. The purpose of this study was to determine the influence of diabetes mellitus in angiographic results in patients with AMI undergoing primary percutaneous coronary intervention (PCI).

Methods and materials: We retrospectively included 352 patients with AMI treated with PCI, enrolled between January 2000 and March 2017 in Cardiology B department of Fattouma Bourguiba University Hospital.

Results: Among 352 patients, 115 (32.7%) had diabetes at admission. Mean age was similar in diabetic (59.8 ± 10 years) and non diabetic patients (60.2 ± 12 years). Diabetes was associated with higher prevalence of female gender (p = 0.029), essential hypertension (p < 0.0001), hyperlipidemia (p = 0.001), previous myocardial infarction (p = 0.023), more often treated after 6 from symptom onset (p < 0.0001). Diabetic patients had longer door-to-ballon times (308 vs 283 min; p = 0.033). They presented more extensive coronary disease (p = 0.001), but they were nearly equally to have baseline TIMI flow (TIMI0: 71.3% vs 72.2%; TIMI1: 5.2% vs 6.2%; TIMI2: 12.2% vs 10.5%; TIMI3: 10.4% vs 11.4%; p < 0.0001). Diabetic patients had a little more thrombotic charge (low thrombotic charge: 53.2% vs 50.4%; High thrombotic charge: 16.5% vs 15.6%; p < 0.0001). They were less likely to have final TIMI3 flow (30.3% vs 69.7%; p = 0.027). Coronary dissection, residual thrombus and no-reflow were more frequent in diabetic group (p < 0.0001 for all). They had higher rate of in-hospital death (7.7% vs 4.3%; p < 0.0001).

Conclusion: We conclude that diabetics with AMI undergoing PCI have less favorable baseline angiographic characteristics and they have a significant higher mortality.

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Introduction: Myocardial infarction (MI) represents a major public health challenge. Studies have demonstrated the involvement of several factors contributing to this complex pathogenesis. The purpose of this study was to compare the angiographic features of patients with MI less than 45 years of age and compare them to patients older than 55 years.

Material and methods: This prospective study included 140 patients admitted to the cardiology department at the university hospital of Casablanca with a primary diagnosis of MI. The patients were divided into two groups based on age. Group I (GI) included patients less than 45 years of age. Group II (GII) included patients over the age of 55 years.

Results: In total, 140 patients were analyzed in the study. The patient sample was equally split amongst the two groups representing 70 patients in each group. There was a male predominance in both groups (70% in GI and 67% in GII). The median age in GI was 37.87 ± 11.75 and 64.21 ± 11.73 years in GII. Smoking was identified as the most common risk factor in young subjects at a rate of 61.8% vs 38.2% in GII ($p = 0.007$). The frequency and severity of coronary lesions were lower in GI compared to GII ($p = 0.04$). In younger patients, 22% had single vessel disease vs 15% in GII. However, multi-vessel disease was more common in older patients (12% in GII vs 7% in GI; $p<0.001$). Normal angiography findings were observed in 5% of cases in GI versus 1% in GII. An analysis of the locations of the coronary lesions revealed a predominant involvement of the left anterior descending (LAD) artery in both groups.

Conclusion: Myocardial infarction in young adults presents several characteristics including a predominance of single vessel disease and smoking. Screening for Smoking should be strongly considered as early as possible.
Background: Lipoprotein (a) (Lp(a)) is a lipoprotein synthesized by the liver that is composed of a low-density lipoprotein (LDL) molecule, a high molecular weight glycoprotein apolipoprotein(a) (Apo), and a single molecule of Apo(B). We investigated the relationship between Lp(a) concentrations and severity of coronary artery disease (CAD) in T2 diabetic patients.

Methods: The study included 148 CAD with T2DM patients and 159 CAD patients, recruited from the Department of Cardiology University Hospital, Monastir. Severity was quantified using GS and coronary stenosis degree. Patients were classified according to GS median value (median = 40) and Lp(a) cut-off value (30 mg/dL). Circulating levels of Lp(a) were determined by immunoturbidimetry using an analyser COBAS INTEGRA 400, Roche, Germany). We used Statistical Package for Social Sciences (SPSS, version 23.0), for data analysis.

Results: Our results showed that the Lp(a) levels were significantly higher in diabetic CAD patients than in CAD patients without DM (15.2(2.3 – 225.8) mg/dL vs. 9.5(0.2 – 123.0) mg/dL; \( p = 0.002\). No significant association was shown between Lp(a) and severity of CAD in diabetics patients expressed by GS and stenosis degree. The area under the receiver operator characteristic (ROC) curve (AUC) of Lp(a) levels discriminating between non-diabetic and diabetic patients, was (0.623±0.039; (95% CI: 0.547; 0.699); \( p = 0.002\).

Conclusion: Lp(a) levels could be a predictive risk factor for the development of cardiovascular disease in diabetic patients. Lp(a) levels were not associated with the severity of CAD expressed by GS.
**Introduction:** Currently the treatment of choice of aortic coarctation is percutaneous treatment. Iatrogenic dissection of the iliac artery is one of the rare complications that can occur during this technique. We report a rare case of a coarctation of the aorta treated by percutaneous treatment through a right ilio-femoral bypass following a dissection of the right external iliac artery during a first attempt at percutaneous dilation of this coarctation of the aorta.

**Case report:** We report the case of a 28 years old young woman, with no medical history admitted for shortness of breath at exercise. On physical examination, we noted an elevated arterial pressure and a significant difference between upper and lower limbs pulses and arterial pressure (140/90 vs 120/80). The cardiac auscultation noted an inter-scapular murmur. On echocardiography, we found a moderate Left Ventricular hypertrophy with a preserved contractile function, a bicuspid aortic valve and a coarctation of the aorta with maximum gradient at 40 mmHg and significant prolongation of anterograde blood flow during diastole (over 1m/s). Chest CT scan was performed and showed circumferential coarctation of the descending aorta (post isthmic coarctation) reducing the lumen of the aorta of 65%. The decision was to perform a percutaneous treatment but the procedure was complicated by a dissection and perforation of the right external iliac artery with a hemorrhagic choc. It was repaired at the operating room by a direct suture of the artery. A control CT scan was performed showing a total occlusion of the right external iliac artery at 1 cm of its origin with the development of a collateral circulation from the epigastric artery perfusing a normal right femoral artery. A percutaneous angioplasty of this occlusion was performed with failure (no repermeabilization of the artery). Figure (1-3) A surgical treatment was then decided. An ilio-femoral bypass was done and the percutaneous treatment of the coarctation of the aorta was performed successfully through the bypass (the maximum gradient of the end of the procedure was about 10mmHg). Figure (4) The evolution was favorable.

**Conclusion:** We managed to treat by a percutaneous treatment a coarctation of the aorta, which was complicated by an iatrogenic dissection of the external iliac artery. A hybrid technique consisted of an ilio-femoral bypass followed by a percutaneous dilation of aortic coarctation through this bypass.
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Introduction: Rashkind balloon atrial septostomy (BAS) is a cardiac procedure aimed at improving systemic oxygenation by creating an atrial septal defect in newborns with cyanotic congenital cardiac defects, such as transposition of the great arteries (TGA). The aim of the study was to examine the impact of Rashkind procedure on cardio-respiratory status and short term outcomes in cyanotic neonates.

Methods: This was a retrospective study conducted in the Cardiology department in conjunction with the Pediatric Resuscitation-Anesthesia department at the University Hospital Center of Casablanca from January 2013 to August 2016, and included patients who underwent Rashkind procedure for a transposition of great arteries. We excluded patients who had other major extra-cardiac congenital malformations.

Results: Twelve atrioseptostomies by balloon catheter guided by echocardiography were analyzed in this study. BAS was performed successfully via the femoral vein in all cases. TGA with intact ventricular septum was diagnosed in 10 cases, while the remaining 2 had TGA with ventricular septal defect. There was a predominance of the male sex (60%) with a median age of 26 days (5 to 75 days) and a median weight of 3875g.

The oxygen saturation level pre-procedure was 55% and 86% post-procedure (p< .00001). Of the cases evaluated, one patient had an acute right lower limb ischemia. Six patients had a fatal outcome; two patients during hospitalization in the Neonatal Intensive Care Unit after the procedure by cardiorespiratory arrest and septic shock, two in immediate postoperative after surgical treatment and two after leaving the hospital with no surgical treatment.

Conclusion: BAS guided by the echocardiography improves oxygen saturation in neonates with TGA whose oxygenation may be impaired. The procedure allows effective and prompt palliation in severely ill neonates, thus remains the first-line palliative treatment pending a surgical intervention.

Effect of Rashkind procedure on oxygen saturation level and short term outcomes in neonates with transposition of the great arteries

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Article
English Title
Effect of Rashkind procedure on oxygen saturation level and short term outcomes in neonates with transposition of the great arteries

Category
Abstract

Topic
Other

English Abstract

Introduction: Rashkind balloon atrial septostomy (BAS) is a cardiac procedure aimed at improving systemic oxygenation by creating an atrial septal defect in newborns with cyanotic congenital cardiac defects, such as transposition of the great arteries (TGA). The aim of the study was to examine the impact of Rashkind procedure on cardio-respiratory status and short term outcomes in cyanotic neonates.

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Wilkins score for severe mitral stenosis: what is beyond the procedural considerations?

Walid Slimen, Majed Hassine, Mohamed Mehdi Boussadaa, Ahmed Jamel, Dardouri Safa, Nouha Mekki, Mejdi Ben Messaoud, Marouen Mahjoub, Nidhal Bouchehda, Zohra Dridi, Fethi Betbout, Habib Gamra, Cardiology A department Fattouma Bourguiba University Hospital – Cardiothrombosis Research Laboratory (LR12SP16) – University of Monastir – Tunisia

Background: Percutaneous transvenous mitral balloon valvotomy (PTMV) optimal results are usually achieved when echocardiographic Wilkins score (WS) is ≤8. WS from 9 to 11 represent a gray zone in which only some patients have good results.

Aim: The aim of this study was to determine the early and long term results of this procedure in patients with WS 8 or less and at the gray WS zone.

Methods: Retrospective review of clinical records of patients with rheumatic MS submitted to PMTV. Follow-up was obtained by clinical records when available. Procedure was considered unsuccessful when post-procedure MV area (MVA) was <1.5cm².

Results: We analyzed data for 465 patients with a WS ≤11, 80.2% were women (n=373). Mean age at the time of repair was 34 years [10 to 76 years] and the mean follow up time was 81 months. Before the procedure, 40% had a WS in the gray zone (n=186). They were older (37 years vs. 31.8 years, p<0.001) with a frequent history of mitral valvuloplasty (29% vs. 11.1%, p<0.001). Males presented more in the gray zone (26.9% vs 15.1%, p=0.002) while pregnant women had a WS ≤8 (15.2% vs. 10.9%, p=0.045). Patients in the gray zone presented more frequently with atrial fibrillation (38.7% vs. 21.1%, p<0.001).

There was no difference regarding the functional status or the baseline echocardiographic MVA measurement by planimetry (1.08cm² vs 1.06cm², p=0.24).

PTMV was safe in the two groups with same rates of success but a lower mitral surface gain in the gray zone group (0.96cm² vs. 1.1cm², p=0.24).

During follow up, patients in the gray zone had significantly lower event free survival (freedom from death, systemic embolism and restenosis) (63.4% vs. 78.9%, p<0.001) and had a higher mortality (2.7% vs 0.4%, 0.04), higher rates of restenosis (33.9% vs. 17.2%, p<0.001) and required more frequently a mitral valve replacement (15.6% vs. 8.4%, p=0.009).

Conclusion: PMTV was a safe procedure in both WS groups. Optimal results patients with a WS ≤8 zone. Patients with a WS 9-11 experienced worse outcomes during follow up.

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Background: Although drug-eluting stents (DES) have been shown to dramatically reduce restenosis and improve the rate of event-free survival, the benefit of DES appears to be limited to restenosis. In this retrospective, single-center study we aimed to compare the long-term outcomes of DES versus BMS in large coronary arteries (≥3.5 mm).

Methods: A total of 164 consecutive patients (mean age 60 years) required percutaneous coronary intervention with stents ≥ 3.5 mm in diameter, 84 were BMS and 80 DES. The primary endpoint was major adverse cardiac events (MACE) defined as angiographically defined in-stent restenosis (ISR), stent thrombosis and death from any cause.

Results: A mean clinical follow up of 28 months was obtained. The DES group had higher rates of diabetes (63% vs 37%, \(p = 0.001\)), previous CAD (74% vs 25%, \(p = 0.001\)) and previous PCI (69% vs 31%, \(p < 0.04\)). There was no significant difference between the two groups regarding the rate of hypertension, dyslipidemia, smokers and the mean left ventricular ejection fraction. There was a higher average stent length in the DES group (18.7 vs 16.3, \(p = 0.011\)) as well as a lower average stent diameter (3.54 vs 3.63, \(p = 0.003\)). There was a significant difference in MACE between the two groups in favour of DES (11.3% DES vs 23.8% BMS group, \(p = 0.04\)) at 28 months. The rate of in-stent restenosis (ISR) was significantly reduced among patients receiving DES with ISR rates of 15.8% among patients receiving DES compared to 41.7% among those receiving BMS (\(p = 0.025\)). There were no significant differences in the rate of death or stent thrombosis.

Conclusion: In patients requiring stenting of large coronary arteries, there was reduced MACE in patients treated with DES. This benefit was primarily driven by decreased in-stent restenosis rate.

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**Article**

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VARIABILITY OF HEART RATE AS A PROGNOSIS FACTOR IN POST-INFARCTION

**Category**

Abstract

**Topic**

Acute Coronary Syndromes

**English Abstract**

**Introduction:** The heart rate variability is the variation over time in consecutive heart beats. It corresponds to the balance between sympathetic and parasympathetic influences on the intrinsic rhythm of the sinoatrial node. Its normal value (SDNN) <50 ms was considered as a predictor of overall mortality.

The objective of our work is to evaluate the correlation between the value of the SDNN and the prognosis of the post-IDM in the cardiology department of the IBN ROCHD university hospital in Casablanca.

**Material and Methods:** Retrospective study conducted at the non-invasive exploration laboratory in the cardiology department of the University Hospital of Casablanca, over a period of 6 months between January and June 2019. The holter ECG was performed 6 weeks after the release of patients initially admitted for myocardial infarction.

**Result:** Of a total of patients, the ECG holter was prescribed as part of follow-up of a post-IDM in 33% of cases, looking for a rhythm disorder in 25% and as part of the prognosis in 20%. The average age of our patients was 65 years old with male predominance. An SDNN value <50 ms was found in 12% of patients, and was strongly correlated with more severe myocardial infarction, with impaired LVEF <30%. A ventricular arrhythmia was found in 20% of cases, a supraventricular rhythm disorder in 12% and a rhythmic storm in only 1.8%.

Mortality at 1 month was 3% in patients with SDNN <50ms and was 90% of the time cardiac origin.

**Conclusion:** The ECG holter in patients assessed 6 weeks after acute myocardial infarction concluded that a reduction in NDN was an independent predictor of all-cause mortality and the occurrence of cardiac arrhythmias, but the long-term mortality term could not be achieved on this work, and would be the goal of further work late.

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Introduction: Surgery has been the standard of care for the revascularization of left main disease for a long time. However, with the remarkable improvements in interventional cardiology, percutaneous coronary intervention has become technically feasible and showed favorable clinical outcomes.

Aim: We sought to evaluate trends in treatment strategies of left main coronary artery disease over time in our department and to compare patient's characteristics as well as early and long-term adverse outcomes of each therapeutic option.

Methods: From 2005 to 2016, 260 patients with unprotected left main disease were included. 109 patients underwent PCI (group 1), 102 patients underwent Surgery (group 2) and 49 patients were medically treated (group 3).

Results: Over time, the proportion of patients treated with percutaneous coronary intervention rather than coronary artery bypass grafting increased substantially, whereas the proportion of patients who received medical therapy remained steady. Group 1 patients had more cardiogenic shock (6.4% vs 0%, \(p=0.01\)) at presentation compared to group 2. More patients treated with surgery had multivessel disease (73% vs 40%; \(p<0.001\)), more distal left main bifurcation lesions (52.3% vs 73.5%; \(p=0.001\)) and higher SYNTAX scores (23.3±9.96 vs 32.5±8.7; \(p<0.001\)). At follow up, there were no differences, at the adjusted analysis, in the rate of myocardial infarction, cerebrovascular accidents, and the composite endpoint of major cardiovascular and cerebrovascular events (HR: 1.04; 95% CI: 0.59 to 1.83; \(p=0.88\)). Compared to percutaneous coronary intervention group, group 2 has a higher all-cause mortality (\(p=0.017\)) driven exclusively by an elevated incidence of operative mortality (13.7% vs. 6.4%; HR: 0.08; 95% CI: 0.017 to 0.43; \(p=0.003\)). Nevertheless, long-term advantage of coronary artery bypass grafting over percutaneous coronary intervention was the less need for repeat revascularization (HR: 3.1; 95% CI: 1.26 to 8.12; \(p=0.014\)).

Conclusion: Our data show that revascularization therapy have evolved remarkably in the favor of percutaneous coronary intervention over the last decade. Angioplasty and coronary artery bypass graft show comparable safety. However, the need for revascularization is more common after percutaneous treatment.
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Introduction: Ischemic heart disease is a very common pathology in medicine and cardiology in particular. Atherosclerosis is the main etiology, however in 5% of acute coronary syndromes the cause is not atheromatous. Neoplastic causes are exceptional, they may be secondary to tumor invasion of the coronary arteries or extrinsic compression without tumor infiltration.

Case report: We report the case of a 51-year-old woman, without cardiovascular risk factors, with a history of acute pericarditis whose etiological investigation led to viral pericarditis. She was readmitted after three months to our service for management of constrictive retro-sternal chest pain radiating to the left upper limb prolonged without other associated signs. The diagnosis of acute coronary syndrome NSTEMI was retained on clinical, electrical and echocardiographic data. Coronarography was performed within 24 hours, showing tight stenosis of the entire left coronary trunk with a filiform appearance; the anterior ventricular artery was occluded after the birth of the first diagonal. The patient was proposed for coronary bypass grafting. Inoperative (two days after coronarography), a hard, bumpy mass, located at the level of the thymic horns, which infiltrated the middle lobe of the right lung, the pericardium which overtaken it and embedded in the epicardium engulfing the trunk left coronary and the entire proximal segment of the anterior interventricular artery. Faced with the impossibility of revascularization, the surgical procedure was summarized in the creation of a pleuro-pericardial window. A biopsy with an extemporaneous examination found a squamous cell carcinoma of thymic origin confirmed by the final anatomo-pathological examination. Acute coronary syndromes of neoplastic etiology are exceptional.

Conclusion: Our observation is peculiar by the mode of discovery of the thymic tumor which was initially manifested by pericarditis and then by an acute coronary syndrome. We emphasize through this observation the importance of the etiological balance of pericarditis and the possibility of etiologies other than atherosclerosis in acute coronary syndromes especially in patients who do not have cardiovascular risk factors.
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Background: Cardiac catheterization was considered the gold standard for confirmation of diagnosis and analyzing various management issues in congenital heart diseases. In spite of development of various non-invasive tools for investigation of cardiac disorders diagnostic catheterization still holds an important place in pediatric patients.

The purpose of this study was to describe the diagnostic pediatric catheterization procedures and analyze the results and the main complications of the performed procedures.

Methods: This was a retrospective study conducted at the Cardiology department in conjunction with the Pediatric Resuscitation-Anesthesia department at the University Hospital Center of Casablanca from January 2013 to June 2017, including patients having undergone pediatric catheterization.

Results: In total, 50 patients were included. The male sex was more common with a sex ratio of 1.4 and a median age of 5.5 years. 74% of patients underwent interventional catheterization; Rashkind's atrio-septostomy was performed in 26% of cases and dilatation of pulmonary stenosis in 21% of cases. A diagnostic catheterization was performed in 26% of cases: Tetralogy of Fallot (30.8%), ventricular septal defect (23%), atrio-ventricular septal defect (15.4%), double outlet right ventricle (15.4%), idiopathic pulmonary hypertension (7.7%) and pulmonary atresia with ventricular septal defect (7.7%). The goals of the procedure were to explore the anatomy, evaluate the hemodynamics and the pulmonary hypertension in order to assess for operability. Patients with Tetralogy of Fallot had a Qp/Qs ratio <1 while patients with ventricular septal defect had a hemodynamically important defect (Qp/Qs ratio >1.5) associated with pulmonary hypertension and an elevated pulmonary vascular resistance. In total, 67% were operable.

Complications in diagnostic catheterization occurred in 30.7% of cases including bleeding from the puncture site (15.4%), allergic reactions to contrast (7.7%) and Post-procedure infection (7.7%).

Conclusion: Diagnostic cardiac catheterization plays a pivotal role in the evaluation of patients with suspected or known heart disease. It is commonly used to assess the severity and operability of congenital heart disease.
Common arterial trunk and pulmonary stenosis: Which place for interventionel catherization?

Introduction: Common arterial trunk is a rare congenital heart disease in which only one artery arises from the heart. It's responsible for the systemic and pulmonary circulation and which it overrides a large outlet ventricular septal defect (VSD). Different types are distinguished based on the origin of the pulmonary arteries (PA). The commonly used classification is proposed by Van Praagh. Stenosis of one or both of pulmonary artery may be present and it may influence management and outcomes.

Case report: A 34- day infant from a monofetal pregnancy was admitted to our cardiac center in May 2015 for dyspnea. An echocardiography showed a wide VSD by misalignment. Pulmonary hypertention 60 mmHg and a CAT overlapping the two ventricules. There is no interruption in aortic arch. The diagnostic was a CAT type I. He was quickly transferred to Italy to the SAN DONATO center where he underwent surgical repair on 29th May. The immediate postoperative period was stable. But it was impossible to extubate the patient. So an echocardiography was performed that showed severe stenosis at the pulmonary bifurcation.

He underwent a transcatheter procedure on 11th June 2015 with implantation of two stents in both pulmonary branches, achieving good result.

The latest echocardiography check showed no signs of RV pressure overload. No residual intracardiac shunts. The Stents are well placed in both PA with unobstructed flow.

Two years later, the child reconsulted for worsening dyspnea. An Echocardiography showed an important dilatation of the RV and a pressure of 120 mmHg. Cardiac catheterization was performed on 2017 but was un conclusive to locate the seat of the obstacle.

A CTA was performed and showed intra stent stenosis of both PA.

On 2018, the child has had balloon dilatation for the two PA with kissing balloon and a good result. There has been improvement of his symptomatologies.

Conclusion: TA is a serious disease grafted with heavy mortality. The treatment is based on surgical repair. But in some circumstances, interventionel treatment can be an asset in the care of this disease.
Background: Since the 2000s, thromboaspiration (TA) has been widely used in the percutaneous coronary intervention (PCI) of ST elevation myocardial infarction (STEMI) by improving the myocardial perfusion and avoiding distal embolisation. Otherwise, recent trials have questioned its safety. Therefore, European and American guidelines are against the routine use of manual TA during primary PCI. Our study aims to evaluate the immediate angiographic results of the TA and to identify predictive factors related to its failure to help the clinical decision making by physicians for the use of TA.

Methods: We performed an observational prospective study in the Functional Explorations and Cardiac Resuscitation department at the Rabta hospital during 3 years from January 2016 to December 2018. We included all patients who underwent TA using the Export™ catheter during a primary PCI for less than 12h evolving ST segment elevation myocardial infarction (STEMI). TA was used at the operators’ discretion. Efficacity of this technique was assessed in terms of TIMI classification for the coronary flow at the end of procedure. Factors of insufficient reperfusion due to failed TA were identified in relation with a TIMI flow <3 in the culprit artery at the end of the PCI.

Results: We have included 60 patients. Mean age was 59.7±13.6 years. 81.7% were males. Anterior location of STEMI was noted in 60%. 15% of patients presented with cardiogenic shock. The median delay between symptoms and wire crossing was 5h [3.8-8.7] hours. 71.6% of the patients benefited from a GPIIbIIIa inhibitor. Initially, 68.3% of the patients presented a TIMI 0 flow. At the end of the procedure, a TIMI 3 flow was established in 66.7% of the population. We identified 4 cases (6.6%) of in-hospital Major Adverse Cerebrocardiovascular Events.

The associate factors of a failure TA were: the delay between symptoms onset and wire crossing ≥5h (p=0.025) and a cardiogenic shock (p=0.04). Multivariate study showed that tardive presentation with a delay between symptoms onset and wire crossing ≥5h was the only predictive factor of a failing TA (Odds Ratio= 4 CI95% [1.1-14], p=0.037).

Conclusion: Our data showed that the delay between symptoms onset and wire crossing ≥5h was a predictive factor of failure of this technique. Identifying such risk factors will improve the effectiveness of the primary PCI with a selective TA.

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Abstract: The safety and efficacy of percutaneous coronary intervention (PCI) improved dramatically after the introduction of the coronary artery stent. But together with the growing use of stents, stent thrombosis, the most feared complication after stent implantation, has emerged as an important entity to understand and to prevent. We are about to report a case of simultaneous sub-acute double vessel stent thrombosis of left anterior descending artery and right coronary artery at 75 years old men after coronary angioplasty of the index arteries with three different drug eluting stents (DESs) for stable angina in context of circumferential STEMI. The result of the primary PCI was good, and the patient was discharged in stable condition. This rare case reminds physicians that in an era of new-generation DES, we should still keep multiple ST in mind (could lead to catastrophic clinical outcome) and consider checking platelet function and/or genetic testing in the high-risk patients with poor clinical outcomes. Furthermore, new-generation antiplatelet drugs such as ticagrelor or prasugrel were also suggested to avoid possible clopidogrel resistance in these patients.

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I agree that the email addresses provided may be used in sending emails related to the Cardiovascular field including our Editors’ Choice and reviewer invitations etc.
Introduction: Chest pain is a common cause of emergency consultation. Despite the continuous progress in the diagnosis tests; chest pain in emergency department is still a challenge for the physicians. Our study aims to analyze the incidence and diagnostic modalities of chest pain through a prospective series of patients admitted to the emergency department for pain of any origin.

Material and Methods: Prospective study lasting 1 month between August 2018 and September 2018 including 304 patients who came to the emergency department for pain of any origin or any pathology with pain. We selected for this study 209 patients with a cardiovascular origin of the pain.

Results: 209 patients were included in the study; the mean age was 52 years ±13, with a male predominance (sex ratio 2.5). The mode of admission is dominated by patients who came directly to the emergency department of Ibn Rochd university hospital: 62.7% VS 37.3% of patients who have already consulted a doctor (often generalist) or referred by a medical structure. The delay between the onset of chest pain and admission to the emergency department was very variable and in most cases this time exceeds 24 hours. The onset mode of the pain was often brutal (77%) while 23% had a progressive installation. All patients received a chest x-ray and electrocardiogram and echocardiography if needed. Etiologies were dominated by coronary causes (79.3%) followed by cardiac decompensation (15.5%), pericarditis (3.1%) and pulmonary embolism (2.1%).

Conclusion: Physicians who manage patients with chest pain must be aware of the diagnostic problems. Certainly the cardiovascular causes are frequent and serious but the other causes are not rare, and the complementary tests must be directed by the clinical examination.
Spontaneous dissection of coronaries: About four patients

Introduction: Spontaneous coronary dissection is a rare etiology of myocardial infarction (MI), but of considerable frequency, especially in young women. Four cases of spontaneous coronary dissection occurring in patients presenting with acute coronary syndrome are reported.

Cases-report: These are four women under 60 years old with an average age of 49 years. All had no pathological antecedents except that there is a notion of the use of estrogen-progestins. Two patients were admitted to our service for an uncomplicated semi-recent anterior MI. One patient presented with ST Elevation Myocardial Infarction in the anterior area thrombolysis and underwent salvage angioplasty. The fourth patient was hospitalized for SCA without ST segment elevation with electrical modification in the derivations v1-v6 and troponin elevation. Coronary angiography showed a dissection of the anterior interventricular artery that stretches from the proximal segment to the distal one. Initially, left ventricular systolic function assessed by transthoracic echocardiography was impaired in all cases. All patients were put on anti-ischemic therapy, a conversion enzyme inhibitor and a b-blocker. An angiographic control was done ten days after the initial coronary angiography and the evolution was marked by an extension of the lesions with an extensive spiroid dissection on the left common trunk and the circumflex in the patient who presented for MI thrombolysis with failure while the lesions remained stable in those presenting for a semi-recent MI and there was a regression of the dissection in the other two cases. Systolic function improved only in cases where the dissection regressed. Subsequent monitoring was done by cardiac scanners.

Conclusion: Spontaneous dissection often occurs on a particular terrain. The treatment is mainly based on the first days of rest and medical treatment. Evolution is often favorable.
Introduction: The traumatic rupture of the aortic isthmus is a rare event, often fatal, occurring in a context of violent trauma. Blast-related lesions, related to transmission through the body of the shockwave following an explosion, mainly concern the lung parenchyma and the middle ear. Aortic rupture is the main lesion of the large mediastinal vessels and it is exceptionally reported outside of wars. It is frequently accompanied by associated lesions that condition the vital prognosis. Its diagnostic modalities have benefited from the generalization of non-invasive explorations such as computed tomography. Conventional emergency surgery remains the therapeutic reference for isolated isthmic ruptures, or not accompanied by severe associated lesions, whose prognosis is not likely to be aggravated by aortic clamping and general heparinization.

Clinical case: We report the case of a 50-year-old man with no history of a work-related accident with a burst of a tire resulting in closed chest trauma with chest pain and dyspnea. Hemodynamic constants were stable. The chest radiograph showed a hemo-pneumothorax on the right which was drained, a hemothorax of average abundance on the left and a fracture involving the anterior arch of the 5th, 8th, 9th and 10th straight sides. The thoracoabdominal CT scan (Figs. 1 and 2) showed a rupture of the aortic isthmus with bilateral pleural effusion of low abundance and hepatic and renal failure foci. The patient was operated on. Under extra-corporal circulation, he had an interposition of a Dacron tube No. 24. The operative follow-ups were marked by an agitated awakening. A cerebral CT showed a right hemorrhagic foci, requiring neuroleptics with good evolution.

Conclusion: The primary lesions caused by blast are multiple (pulmonary, tympanic, digestive, cerebral, ocular ...). Among the cardiovascular effects are described hypotension, rhythm disorders, myocardial lesions, but also ruptures of the aortic isthmus which remains rare, whose management must take into account the associated lesions.
Background: The initial complete repair of conotruncal diseases is often the cause of pulmonary valvular lesions. Their neglect during adulthood could be life threatening. Pulmonary valve replacement is subsequently an obligation due to the inevitable degeneration of the bioprostheses used. The goal in these patients was to delay the surgical procedure as far as possible without reaching the stage of irreversible lesions. Many questions arise about the benefit of this surgery and the factors it depends on. The aim of our study was to evaluate short, medium and long-term outcomes of pulmonary valve replacement.

Methods: This was a retrospective study, conducted between January 1999 and March 2016, involving 34 patients with conotruncal heart disease. They had at first a complete repair of their malformation and in a second time a pulmonary valve replacement.

Results: The mean age at pulmonary valve replacement was 20.22 years. The rate of patients with tetralogy of Fallot was 64.70%. The reason for valvulation was severe pulmonary insufficiency in 76.50% of cases. Pulmonary valve replacement was done by a bioprosthesis in 56% of patients and by a valved tube in the remaining patients.

Our study showed an early postoperative mortality rate of 2.9% and a major postoperative adverse events rate of 32.35%. After a mean follow-up of 3.14 ± 2.42 years, the results of our study were in favor of a non-significant improvement (p = 0.36) in the functional status of patients, the stability of right (p = 0.08) and left ventricular function (p = 0.6) and the decrease in QRS duration (p = 0.05). The Freedom from valve dysfunction at 5 years and 10 years was respectively 62.4% and 52%. The freedom from valve reintervention for the same durations was respectively 87.4% and 72.8%.

Conclusion: Pulmonary valve replacement has a low mortality risk despite its iterative nature. Highly specialized management and optimization of operative timing is required for these rapidly growing numbers of patients.

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