Stent For Life, Egypt
A Success Story

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NHI, Cairo, Egypt
@hragy
Stent For Life Initiative in Egypt

Professor Mohamed Sobhy, MD, FACC, FESC
Professor of Cardiology Department, Alexandria University - Egypt
Past President of the Egyptian Society of Cardiology
Governor of ACC Chapter in Egypt
CardioAlex Chairman
Chairman of ICC Hospital, Alexandria
SFL Egypt Champion
Egyptian Journey in pPCI

• 2006: Workshops, Discussions, cases.

• 2007: We started to share in international track.

Management of acute coronary syndromes in developing countries: The ACCESS registry

Mohamed SOBHY (Egypt), Norla ANTEPARA (Venezuela), Alvaro ESCOBAR (Colombia), Samir ALAM (Lebanon), Alain LEIZOROVICZ (France), Carlos MARTINEZ (Mexico), José NICOLA (Brazil), Gilles MONTALESCOT (France), on behalf of the ACCESS investigators
End of 2010: We finally found our way
Egyptian Population

Year:
- 2018
- 2017
- 2016
- 2015
- 2014
- 2013
- 2012
- 2011

Population:
- 70,000,000
- 75,000,000
- 80,000,000
- 85,000,000
- 90,000,000
- 95,000,000
- 100,000,000
- 105,000,000

Egyptian Situation
Egyptian Situation

Number of cathlabs
SSL Pilot centers
Number of Cathlabs working 24/7
Government Reimbursement
The start ..

- November 2010
- Brain storming Camp
- 80 eminent Intervention Cardiologists, MOH representatives, NGOs, Health Insurance, EMS and .. The minister of Health.
Gathering Baseline Data

(1) Need Registry

(2) Ambulance capacity for geographic distribution

(3) Quality of ambulance contact center for refer

(4) Training programs for PPCI & ER MOH physicians

(5) ER plan ministry of Health

(6) Patient Funding

Road Map

MOH
Current situation: patient pathway

The platform we working on...

- Only ambulance from specialised cardiac hospitals have a physician on board
- Not properly trained
- ECG only on board in new ambulances
- No clear unified protocol
- Will drive patient to nearest hospitals
- If private insurance: will go to private hospital

Patient

EMS

- Calls cardiologist
- Calls private hospital
- Calls physician from private insurance
- Calls EMS
- DENIAL

Cathlab

ICU

Local hospital

Home

- Not all are open 24/7
- Lack of awareness of how to treat an AMI patient
- Cathlab not prepared for AMI patients
- Logistic obstacles
Dear professor,

If you want to apply as a pilot center in Stent For Life project Egypt kindly check the criteria for primary PCI centers and fill the application form and submit it online it will be sent directly to the project management (ICOM) then you will be contacted by the audit committee for an inspection visit, you will be informed with the date and time of visit.

www.stentforlifeegypt.com
Reperfusion Therapies

Stent for Life Initiative placed at the forefront in Egypt 2011

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1. Faculty of Medicine, Alexandria University, Alexandria, Egypt; 2. Faculty of Medicine, Ain Shams University, Cairo, Egypt; 3. Faculty of Medicine, Zagazig University, Zagazig, Egypt; 4. Faculty of Medicine, Suez Canal University, Port Said, Egypt; 5. Faculty of Medicine, Tanta University, Tanta, Egypt; 6. National Heart Institute, Cairo, Egypt
## Mapping Situation (December 2013)

<table>
<thead>
<tr>
<th>Area</th>
<th>Population</th>
<th>Cath. Labs</th>
<th>24/7</th>
<th>SFL Pilot</th>
<th>Population/Cath lab working 24/7</th>
<th>Population/SFL Pilot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alexandria</td>
<td>6%</td>
<td>10</td>
<td>5</td>
<td>3</td>
<td>972000/cath lab</td>
<td>1.620000/center</td>
</tr>
<tr>
<td>Cairo</td>
<td>12%</td>
<td>34</td>
<td>12</td>
<td>7</td>
<td>833000/cath lab</td>
<td>1.430000/center</td>
</tr>
<tr>
<td>Giza</td>
<td>10%</td>
<td>34</td>
<td>9</td>
<td>6</td>
<td>888000/cath lab</td>
<td>1.330000/center</td>
</tr>
<tr>
<td>Delta</td>
<td>21%</td>
<td>12</td>
<td>4</td>
<td>4</td>
<td>4.250000/cath lab.</td>
<td>4.250000/center</td>
</tr>
<tr>
<td>Canal</td>
<td>7%</td>
<td>3</td>
<td>1</td>
<td>1</td>
<td>5.700000/cath lab.</td>
<td>5.700000/center</td>
</tr>
<tr>
<td>Red Sea</td>
<td>4%</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Upper Egypt 1</td>
<td>13%</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>10.500000/cath lab.</td>
<td>10.500000/center</td>
</tr>
<tr>
<td>Upper Egypt 2</td>
<td>20%</td>
<td>7</td>
<td>2</td>
<td>2</td>
<td>8.100000/cath lab.</td>
<td>8.100000/center</td>
</tr>
<tr>
<td>South Sinai</td>
<td>4%</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>West Desert &amp; Upper Sinai</td>
<td>3%</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Mapping situation 2018
N.B: the upcoming slides are from dr. Moheb Wadie (Mansoura University) ppt in ESC 2018
Admission process - Egypt versus Other Countries

Pre-hospital Median Time Delay
In Egypt Vs. EU Countries

<table>
<thead>
<tr>
<th>Time Delay</th>
<th>Egypt</th>
<th>EU Countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms to call</td>
<td>85</td>
<td>74.5</td>
</tr>
<tr>
<td>Symptoms to first medical contact</td>
<td>120</td>
<td>100</td>
</tr>
</tbody>
</table>

P = 0.039
P < 0.001

ESC Congress
Munich 2018
Admission process - Egypt versus Other Countries

- **via ambulance/EMS**
- **Self presented**

**Egypt**

**Other countries**

P < 0.001
Admission process - Egypt versus Other Countries

Admission site: PCI vs. Non PCI hospital

- Egypt:
  - First hospital not a PCI centre: 57.96%
  - Admission direct to PCI centre: 42.04%

- EU:
  - First hospital not a PCI centre: 73.01%
  - Admission direct to PCI centre: 25.99%

P < 0.001

Out of hospital cardiac arrest

- Egypt:
  - 2.51%

- EU:
  - 5.49%

???
Treatments

- **Given Treatment**

![Bar chart showing treatment comparison between Egypt and other countries.](chart.png)

- **Primary PCI**
  - Egypt: 85%
  - Other countries: 49%
- **Thrombolysis**
  - Egypt: 43%
  - Other countries: 7%
- **None/Not applicable**
  - 7.82 vs 7.32
How-to-Guide

SFL Egypt: How to work innovatively with government

M. Sobhy¹, A. El Shal²
¹ Stent for Life Egypt Country Champion
² Stent for Life Egypt Project Manager
³ KOM, Alexandria, Egypt

SFL Egypt has found innovative ways of working with the government during a turbulent period. Egypt became a member of SFL at the end of 2010 and held a brainstorming session with 60 prominent intervention cardiologists, Ministry of Health (MOH) representatives including the minister of health, non-governmental organizations (NGOs), health insurance providers and the emergency medical service (EMS). A road map was created which specified three main tasks: (1) the responsibility of the MOH; (2) the role of EDs; and (3) the responsibility of the EMS. These were the foundation for the creation of the SFL programme. The MOH represented the first step in the process, with the help of the EMS. EDs were then trained in the use of SFL equipment, which was distributed to the EDs. The SFL programme was designed to provide a comprehensive emergency medical service (EMS) system in Egypt. The programme was implemented in three phases: (1) establishing the SFL programme in EDs; (2) training ED staff in the use of SFL equipment; and (3) providing SFL equipment and training to EMS personnel. The SFL programme was designed to provide a comprehensive emergency medical service (EMS) system in Egypt. The programme was implemented in three phases: (1) establishing the SFL programme in EDs; (2) training ED staff in the use of SFL equipment; and (3) providing SFL equipment and training to EMS personnel.
Cardiology in Egypt is improving through increased links with Europe and the USA

The president of the Egyptian Society of Cardiology discusses his vision for bringing the speciality onto the 'world stage' with Jen Taylor

It is one of the two big cardiology meetings held annually in Egypt. The second, CardioEgypt, is in February and this year the 5-day event had 48 guest speakers from the USA, Canada, Europe, and Arab countries and more than 360 Egyptian speakers and chairpersons.

The Egyptian Society of Cardiology hosts 13 working groups that have been active for a number of years: Interventional Cardiology; Electrophysiology & Pacing; Echocardiography; Preventive Cardiology; Heart Failure; Nuclear Cardiology; Continuous Medical Education; Thrombosis and Haemostasis; The Egyptian Working Group of Pediatric Cardiologists; Cardiovascular Drug Therapy; Lipidology; Vascular Biology and Research; Cardiovascular Diseases in Women; and Peripheral Vascular Disease.

The working groups collaborate with international societies, and their main objective is to hold specialist conferences.

Creating a core syllabus for young cardiologists is another major project. Sobhy, who is Egypt’s national coordinator for ESC guidelines, has received approval from Professor Alec Vegetable, MD, chairman of the ESC’s Committee for Practice Guidelines, from 2006 to 2010 and Professor Roberto Ferrari, MD, president of the ESC from 2008 to 2010, to adapt ESC guidelines to Egyptian cardiologists.

‘We don’t have Egyptian guidelines’, says Sobhy. ‘It’s very difficult because we don’t have trials.’ The society and its Cardiovascular Drug Therapy working group agreed that they needed to adapt the guidelines that would most closely fit the Egyptian situation and that these would be the ESC guidelines.'
Acute Coronary Syndrome Registry

Hany I. Ragy¹, Ghada A. Kazamel¹, Mohamed Sleem¹, Khaled El Tohamy¹, Mohamed Helmy¹, Basem Zarif³, Medhat M. Elsayed¹, Hisham Sleem¹, Ahmed Magdy¹, Magid Alabbadi¹, Farid M. El Gendy¹, Tarek Abd El Ghafar¹, Abdelkader A. Elbakery¹, Waleed Abass²

¹ Cardiology Department, National Heart Institute, Egypt
² Cardiac Surgery Department, National Heart Institute, Egypt
Method:

Patients:

Enrolled 886 ACS patients on 1/6/2011 and closed for statistical analysis on 30/12/2012.

All patients signed the hospital standard consent form which allows data collection for study and statistical purposes.
In hospital management

- **Thrombolytic therapy** was used in 264 out of 482 STEMI patients (54.7%)

- Streptokinase in 260 patients t-PA was used in 4 patients; 1 out of 404 NSTEMI received Streptokinase.

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**Table 3 Treatment and Mortality**

<table>
<thead>
<tr>
<th></th>
<th>All (886)</th>
<th>STEMI (482)</th>
<th>Other ACS (404)</th>
<th>Rescue revascularization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thrombolysis</td>
<td>269/886*</td>
<td>268</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCI</td>
<td>265/886 (29.9%)</td>
<td>180 PPCI (37%)</td>
<td>46 (11%)</td>
<td>39 rescue</td>
</tr>
<tr>
<td>No revascularization</td>
<td>N/A</td>
<td>38 (7.8%)**</td>
<td>88%***</td>
<td></td>
</tr>
<tr>
<td>Death</td>
<td>19/886 (2.1%)</td>
<td>14/482 (3.1%)</td>
<td>5/404 (1.2%)</td>
<td></td>
</tr>
</tbody>
</table>

* Mostly in 483 STEMI cases. ** 22 inconclusive ECG and 16 late presenters
*** No revascularization during index hospitalization
Discussion: High Use of Thrombolysis

• PPCI was used in 37% of STEMI patients while thrombolytic, namely streptokinase were used in 55.6%.

• In spite of 24/7 Cath labs and full involvement in stent for life program, less than 40% of STEMI patients coming to NHI undergo PPCI.

• IV thrombolysis remains the strategy used in the majority of STEMI patients; this needs to be addressed.
Identified Unmet needs

Patients
1. Teach patients about heart attacks and importance of time.
2. Encourage them to call the emergency if symptoms were felt.
3. Special patient awareness campaigns around the pilot centers to monitor the effect of the campaigns.

EM S
1. EMS team awareness for the diagnosis of MI.
2. To implement all needs for MOH and project coordination.
3. Transporting the data from the car to the hospital.

Hospitals
1. Physician education.
2. MOH support.
3. Cath lab equipments and needs including physicians and nurses and techs.

Registry
1. Mortality rate in the registry.
2. Need to increase centers in registry phases.
إنقاذ مرضى جلطات القلب أول 9 دقيقة

تم اختيار 22 مركزًا في 12 محافظة تابعة لوزارة الصحة والجامعة للمشاركة في مشروع دعامة الحياة التي تمثل المبادرة الوطنية لإنقاذ مرضى الصدمة القلبية. في المشروع، يقوم المركز بإجراء 90 عملية توعية وتريبي دعامة عامة في العام، وأن يكون الطبيب الواحد قام بإجراء 90 حالة قسطرة في العام. وإن يتوقع في المركز عدد من الكفاءات الطبية المتخصصة.

ومن جانبة أوضح الدكتور محمد صبحي استاذ أمراض القلب جامعة الاسكندرية
Conclusion

• SFL now SSL Egypt was a successful first step in the right direction.
• In 2018 the Egyptian MOH formed a National Heart Attack committee mainly formed from the Original SFL members aiming at National level management of Acute Coronary Syndromes.
Thank You