FACULTY

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Marcello Galvani *(Forlì, I)*
Derek Hausenloy *(Singapore)*
Borja Ibanez *(Madrid, E)*
Petra Kleinbongard *(Essen, D)*
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Serge Masson *(Milano, I)*
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Sven Nylander *(Mölndal, S)*
Luigi Oltrona Visconti *(Pavia, I)*
Filippo Ottani *(Forlì, I)*
Michel Ovize *(Lyon, F)*
Stefano Savonitto *(Lecco, I)*
Derek Yellon *(London, UK)*

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Gabriele Crimi *(Pavia, I)*
Giuseppe Di Pasquale *(Bologna, I)*
Sergio Leonardi *(Pavia, I)*
Ugo Limbruno *(Grosseto, I)*
Giampaolo Morciano *(Ferrara, I)*
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Alessandro Navazio *(Reggio Emilia, I)*
Paolo Pinton *(Ferrara, I)*
Italo Porto *(Roma, I)*
Paolo Sganzerla *(Treviglio - BG, I)*
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VENUE

Archiginnasio, Conference Hall of the Società Medico-Chirurgica
P.za Galvani 1, Bologna (Italy)

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WORKSHOP OW

Looking beyond primary angioplasty in ST-elevation myocardial infarction: myocardial cardioprotection at the crossroads

BOLOGNA
June 24,25 2016

Archiginnasio, Conference Hall of the Società Medico-Chirurgica

RATIONALE

Despite improvements in prevention and therapy, acute myocardial infarction remains a major cause of disabling morbidity and death in developed countries, and its incidence is rising in developing countries.

The disease is costing the European Union economy billions of euros per year. In the early '70s, seminal experimental studies by Maroko and coworkers first established that myocardial reperfusion could reduce infarct size following an acute coronary artery occlusion. Timely reperfusion using either thrombolysis or primary percutaneous coronary interventions (PPCI) forms the cornerstone of therapy for ST-elevation myocardial infarction (STEMI) patients. However, first, mortality, although reduced, is still substantial and, second, its decline due to the widespread use of reperfusion strategies have resulted in an increase in the incidence of chronic heart failure. Most likely, patients with STEMI and severely depressed LV function would not have survived the acute phase of the disease in the past, but today with the quick access to reperfusion, they are able to survive the index event and live with a significantly damaged heart. Paradoxically, although myocardial reperfusion is essential for myocardial salvage, it comes at a price, because it may in itself induce myocardial injury and cardiomyocyte death, a phenomenon termed "myocardial reperfusion injury". Effective therapeutic strategies are lacking against reperfusion injury. Basic science discovered many cellular mechanism involved in the pathophysiology of such phenomenon, and has identified many possible therapeutic targets and drugs able to interfere with them. However, translation of this huge therapeutic potential has been disappointing so far. The exciting results derived from experimental animal models failed to be repeated in humans with STEMI. Adjunctive therapies to thrombolysis and PPCI, however, have been greatly improved over the years and this could have contributed to dilute the effects of the new cardioprotective interventions proposed. Specifically, advances in the antiplatelet therapeutic strategies, have set the stage for additional mortality reduction, as is the case of ticagrelor, which mechanisms may go over the plain antiplatelet effect, implying pleiotropic effect potentially cardioprotective. The aim of the present workshop is therefore to review the knowledge in the field of cardioprotection of reperfused-STEMI patients in an effort to find out new ideas to tackle the challenge of its translation into the clinical arena. New therapies able to reduce infarct size or new and ameliorated application of already used drugs (from oral antiplatelet to beta-blockers, for example) or their combination are eagerly sought under the hypothesis that smaller infarct size will result in better long-term LV function and improvement of prognosis. Beyond application of reperfusion strategies, particularly PPCI, cardioprotection in STEMI patients represents a major challenge to 21st century physicians.

DAY 1, FRIDAY 24 JUNE 2016

12.00 Registration and welcome light lunch

12.50 Welcome Address
Guido Balestra
President of the Myrian Zito Sacco Foundation, Forlì

13.00 Introduction and opening remarks
S. De Servi, F. Ottani

SESSION 1
Myocardial ischemic/reperfusion injury and cardioprotection basic science: still an appealing research issue

Chairmen: G.L. Campo, D. Hausenloy

13.10 Myocardial Reperfusion Injury: from bench to bedside
D. Yellon

13.30 Molecular basis of cardioprotection
P. Kleinbongard

13.50 Role of microcirculation and microvascular obstruction (MVO) in infarct size after STEMI and its relationship with I/R injury
P. Camici

14.10 Discussion

SESSION 2
Cardioprotection in humans-1: non-pharmacological and pharmacological modalities

Chairmen: P. Kleinbongard, G.P. Niccoli

14.30 Ischemic conditioning
- a) Ischemic pre- and post-conditioning
  D. Hausenloy
- b) Remote ischemic conditioning
  H.E. Bøtker
- c) Pharmacological recruitment of cardioprotective signalling
  M. Ovize

15.15 Discussion

15.45 *Coffee break*

SESSION 3
Cardioprotection in humans-2: unresolved issues in translating the protection to the myocardium

Chairmen: L. Oltrona Visconti, M. Ovize

16.15 Cardiac Magnetic Resonance (CMR) imaging in cardioprotection trials: a controversial matter:
- a) CMR is a powerful and accurate tool to quantify area at risk and reduce sample size
  I. Eitel
- b) Area at risk quantification by CMR is another source of bias and should not be used in clinical trials
  B. Ibanez

16.45 Are we at the end of the whole story?
M. Galvani

17.00 Discussion

17.45 First day end of scientific sessions

DAY 2, SATURDAY 25 JUNE 2016

SESSION 4
Why did cardioprotection fail to translate into a better outcome in STEMI patients?

Chairmen: M. Galvani, B. Ibanez

09.00 Trial design and end-point selection.
A. Maggioni

09.20 Role of intravenous antiplatelet agents and immediate versus delayed stenting of the culprit artery
S. Savonitto

09.40 Platelets and anti-platelets drugs: the pleiotropic effects of ticagrelor and its impact on cardioprotection
S. Nylander

10.00 The success hypothesis: the unintended cardioprotection from existing pharmaceutical interventions in STEMI"
R. Bell

10.20 *Coffee break*

SESSION 5
Challenges in translating cardioprotection into a better outcome for patients with STEMI: how to tackle it?

Chairmen: P. Camici P, D. Hausenloy

10.40 Improving cardioprotection in STEMI: what's coming soon
R. Latini

11.00 **PLENARY LECTURE**
Cardioprotection in STEMI patients: a puzzle with too many pieces?
F. Crea

11.30 Final Panel Discussion
led by: **B. Ibanez, L. La Vecchia, S. Masson, D. Yellon**
- a) Selection, potency and potential combination of the cardioprotective approaches
- b) Trial design and endpoint selection (selection of patients, mechanistic vs pragmatic trial, "hard" end-points vs surrogate en-points, acute phase interventions vs subacute phase interventions or combination of both types, etc.
- c) Redefining the role of the adjunctive therapies, either pharmacological and non pharmacological (ticagrelor vs other antiplatelet drugs, delayed vs immediate coronary stenting after successful and stable POBA of the culprit lesion, etc)

12.45 Closing remarks: consensus conclusions and proposals for future research
F. Ottani, S. De Servi

13.00 End of scientific sessions