

# Swiss Cooperative Study Acute Coronary Syndromes and Inflammation

A success story supported by the Swiss National Science Foundation

Christian M. Matter<sup>a</sup>, Stephan Windecker<sup>b</sup>, François Mach<sup>c</sup>, Nicolas Rodondi<sup>d</sup>, Thomas F. Lüscher<sup>e</sup>

<sup>a</sup> Department of Cardiology, University Hospital Zurich, Switzerland

<sup>b</sup> Department of Cardiology, Bern University Hospital, Switzerland

<sup>c</sup> Department of Cardiology, Geneva University Hospital, Switzerland

<sup>d</sup> Department of Ambulatory Care and Community Medicine, Lausanne University, Switzerland

<sup>e</sup> Hospital Centre, and Cardiovascular Research, Institute of Physiology, University of Zurich, Switzerland

In February 2009 the Cardiology Departments of the Bern, Geneva, Lausanne and Zurich University Hospitals joined forces in an SNF project on Inflammation and acute coronary syndromes (ACS) – Novel strategies for prevention and clinical management. This clinical research programme was accepted as part of the Special Programme University Medicine (SPUM) and funded by the Swiss National Science Foundation for 3 years ([www.spum-acs.com](http://www.spum-acs.com)). This cooperative project focuses on the role of inflammation in ACS and its role in the pathogenesis, diagnosis, therapy, and prevention of this disease.

## Participants and goals (fig. 1)

**Aim 1 PREVENTION – ELIPS:** A multidimensional prevention programme to improve patient education after ACS (Pierre-Frédéric Keller, François Mach, David Carballo, Geneva; Nicolas Rodondi, Reto Auer, Lausanne).

**Aim 2 BIOMARKERS:** Identify novel ACS biomarkers in inflammatory cells obtained from coronary thrombi and blood (Christian Matter, Roland Klingenberg, Zurich).

**Aim 3 PROGNOSIS:** Test candidate markers suitable for validation of ACS prognosis (Willibald Maier, Lukas Altwegg, Zurich).

**Aim 4 IMAGING:** Sequential high-resolution plaque imaging using optical coherence tomography (OCT) and virtual histology intravascular ultrasound of culprit and non-culprit lesions among ACS patients (Lorenz Räber, Peter Jüni, Stephan Windecker, Bern).

**Aim 5 REPAIR:** Role of repair processes in endothelial progenitor cells after ACS (Ulf Landmesser, Christian Templin, Zurich).

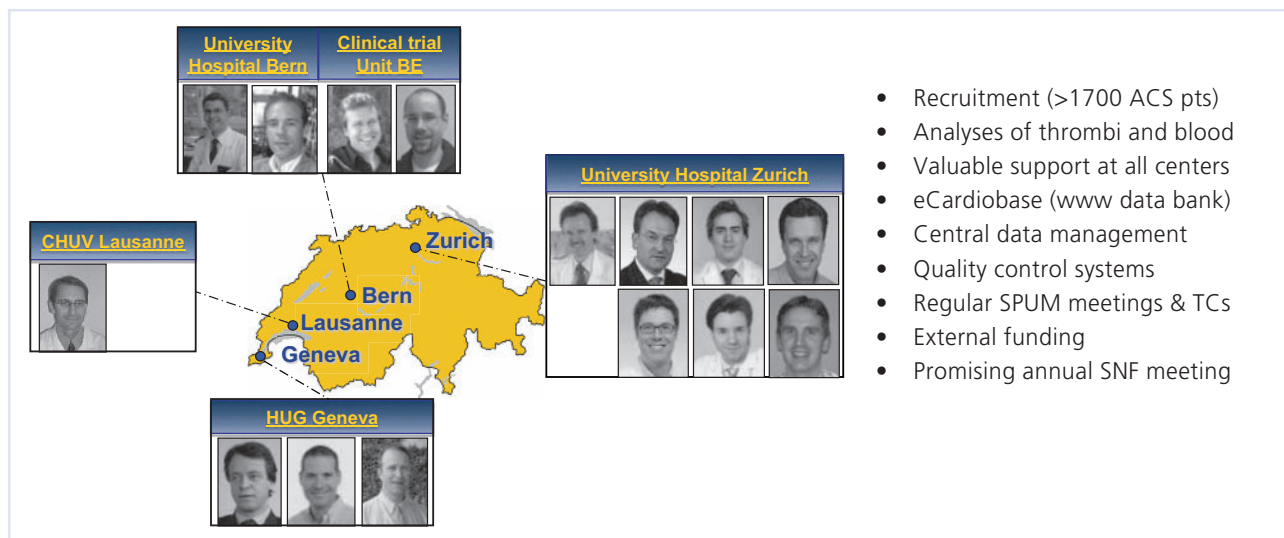
Leading house: University Hospital Zurich. Principal investigator: Thomas F. Lüscher, Co-PI: Christian Matter.

The SPUM project is generously funded by the Swiss National Research Foundation and additional educational grants by Astra-Zeneca, Biosensors, Eli Lilly, Biotronik, Merck, Sharpe & Dohme, St. Jude Medical.

## Events and achievements 2010

- 1) Excellent recruitment of more than 1000 patients Swisswide in the first year.** As of March 2011, we have recruited over 1700 patients for the PREVENTION project, 1300 patients for biomarkers, and have completed recruitment of 1000/100 patients for the randomised controlled COMFORTABLE AMI/OCT stent trial in ST-Segment Elevation Myocardial Infarction (STEMI) patients. We anticipate to include more than 2000 patients at the four participant Swiss University Hospitals by the end of 2011. All patients are followed 30 days after inclusion by a telephone interview and 1 year thereafter in the outpatient clinic (fig. 2).
- 2) Analyses of thrombi and blood cells.** As part of local subprojects we have characterised inflammatory as well as progenitor cells and biomarkers in thrombi and blood of over 100 patients. For this purpose we compare matched patients with ACS, stable coronary artery disease and healthy probands.
- 3) Valuable local support at all centres.** We are grateful for the invaluable local support of over 50 people Swisswide who assist us in attaining these cooperative projects' goals.
- 4) Internet-based databank (eCardiobase).** We have created a web-based databank containing patients with ACS that is accessible by all four university centres with the support of Bern University Institute of Social and Preventive Medicine. This

Correspondence:  
Prof. Thomas F. Lüscher  
Principal Investigator  
Cardiovascular Centre  
Cardiology  
University Hospital  
CH-8091 Zurich  
[cardiotf@gmx.ch](mailto:cardiotf@gmx.ch)



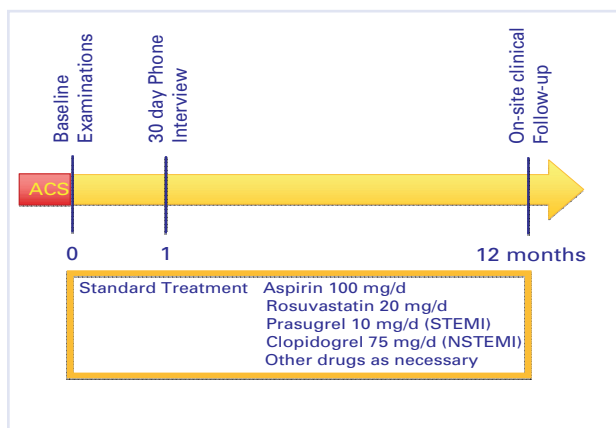
**Figure 1** Special Programme University Medicine “Acute coronary syndrome and inflammation: Participating centres and principal investigators at each site. The exchange of expertise and data within this combined effort will facilitate the development of novel approaches in the management of ACS as part of a large Swiss multicentre cohort.

databank comprises each patient’s demographic, clinical, angiographic and lab values.

- 5) **Quality control and data management.** We have generated tools for central data management and site-specific quality control ensuring optimal data quality.
- 6) **Annual scientific SPUM meeting in October 2011.** The meeting of all SPUM participants in Bern was a success. The SNF is likely to extend SPUM funding.
- 7) **Regular communication via meetings and monthly teleconferences.** Monthly teleconferences and regular face-to-face encounters at major cardiology meetings help to coordinate the project and provide continuing momentum.
- 8) **External funding.** We are grateful to the Swiss National Science Foundation for its role in setting the stage for this cooperation. We appreciate the additional support from foundations and synergies with companies assisting us in fulfilling our projects’ research aims.

**Role of treating physicians (fig. 2):** All participating centres need the continued support of referring and treating physicians (i.e. general practitioners, internists and cardiologists). Indeed, for the interpretation of the data it is crucial that the patients enrolled in this Swiss cohort are seen regularly and stay on the standard medication prescribed, i.e. (1) acetylsalicylic acid (Aspirin® 100 mg/d; (2) rosuvastatin (Crestor® 20 mg/d) and (3) prasugrel (Effient® 10 mg/d) for STEMI patients and clopidogrel (Plavix® 75 mg/d) for NSTEMI patients.

**Figure 2** Study protocol of the main cohort of the Special Programme University Medicine “Acute coronary syndromes and inflammation” with requirement of follow-ups and standard medication.



**Thanks for the excellent teamwork.** Most importantly, we would like to thank the participants at the centres involved, the referring hospitals and physicians, the physicians involved in patient care after ACS and the patients for their valuable support for our cooperative study. We extend particular appreciation to the attending physicians for maintaining the study patients on their original cardiovascular medication or informing us of any changes.

We look forward to continuing teamwork in this exciting endeavour!