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Project title

Differential diagnostic relevance of Copeptin and MR-proANP levels in addition to high-sensitivity cardiac troponin I in patients with acute chest pain

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Study Organisation

- Creating patients' information forms, case report forms, etc.
- Approval of the Ethics Committee of the City of Vienna obtained in January 2011.
- Creating of Database - electronic Case Report Form (eCRF).

Patients' recruitment

- On the *22th of February 2011* the first patient was recruited.
- Determination of circulating levels of the biomarkers, Copeptin and MR-proANP, using the Kryptor Compact Plus™ device.The measurements were performed daily including weekends.
- Collection of clinical data from the Emergency Department documentation, Central laboratory reports, Ward and Catheterization laboratory records and patients' discharge letters.
- Data entry into the eCRF was performed on a daily basis.

- Until *22th of December 2011* in total 675 consecutive patients have been enrolled in the study.

Scientific Outcome

- Using the preliminary data of the first 414 consecutive patients an abstract was written and submitted to the American College of Cardiology's (ACC's) 61st Annual Scientific Session & Expo, which will take place in Chicago,USA, March 2012.*The abstract is outlined below.*

Diagnostic Relevance of Copeptin in Addition to High-Sensitivity Troponin I in Patients with Acute Chest Pain – Preliminary Results of the WILCOP-Registry

Miloš Tajsić, Rudolf Járai

Background

Recent data suggest that combined measurement of copeptin and cardiac troponin T levels provides a reliable tool for early identification of patients with acute myocardial infarction. However, whether this holds true for the new high-sensitivity troponin assays is not known at present.

Methods

This is an ongoing prospective single-centre study of consecutive patients admitted to the emergency department with acute-onset chest pain suggestive of myocardial ischemia. The registry started in March 2011 and the present analysis reports data of the first 414 patients. All patients had copeptin and hs-cTnI determination at admission to the hospital.

Results

Overall, 64 (15.5%) patients had the final diagnosis of ACS. Copeptin and hs-cTnI concentrations at admission were significantly higher among patients with ACS ($p<0.001$; respectively). Accordingly both biomarkers had good diagnostic accuracy, although c-statistics of hs-cTnI (0.898) were significantly higher than that of copeptin (0.700). At admission, 8 (12.5%) pts with ACS had hs-cTnI levels under the detection limit of the assay and 14 (21.9%) pts had hs-cTnI within the reference range. Among patients with normal hs-cTnI concentrations, copeptin levels had good diagnostic accuracy for ACS (c-statistic 0.771; $p=0.001$), while among patients with elevated hs-cTnI copeptin had no diagnostic relevance (c-statistic 0.476; $p=0.734$). The combination of both markers resulted in increase in c-statistic 0.922 ($p=0.115$ compared to hs-cTnI).

Conclusion

Admission Hs-cTnI concentrations have excellent accuracy for early diagnosis of ACS. Especially among patients with initial normal hs-cTnI levels, however, there might be a significant diagnostic relevance of additional determination of copeptin levels.

Further plans 2012

- Ongoing recruitment of patients.

- Next evaluation of data will take place after a total of 1000 patients.