Objective: The aim of this study was to analyse the diagnostic accuracy and the clinical usefulness of combination of troponin and copeptin for rapid rule out of non ST elevation myocardial infarction (NSTEMI) diagnosis in Emergency Department (ED).

Method: This study was an ancillary analysis of a prospective 11 months observational study. Consecutive patients admitted to an university ED for chest pain within 12 hours of ED presentation and without ST elevation on a 12-lead ECG were eligible. Blood samples for determination of copeptin were frozen at –80°C until assayed in a blinded fashion. Patients were classified by two independent physicians (kappa=0.72) as having acute coronary syndrome (ACS) and NSTEMI if cTnI was above 0.1 µg/L on serial testing. Performance of combination of cTnI and copeptin for NSTEMI diagnosis at presentation was studied and clinical utility was assessed by multivariate analysis, area under the curve (AUC) calculation for accuracy, and reporting operating characteristics with 95% confidence intervals.

Results: Out of the 641 eligible patients who were recruited, non-ST elevation ACS was diagnosed in 180 patients (28%) including 95 NSTEMI. The negative predictive value of the combination of copeptin and cTnI measures was 97.6% (95% CI 96.4-98.7) versus 92.8% (95%CI 90.8-94.8) with cTnI alone. The patient classification was significantly improved when copeptin was added to the usual diagnostic tools used for NSTEMI management: the AUC of the model with cTnI alone and with cTnI and copeptin were 0.92 (95%CI 0.89-0.95) and 0.94 (95%CI 0.9-0.96) respectively, p<0.05.

Conclusion: Combination of copeptin and troponin allows a rapid rule out of NSTEMI at admission in ED and improves the early triage of patients with chest pain.

374

Prognostic value at 6 months of discharge residual pulmonary vascular obstruction in intermediate- to high-risk pulmonary embolism

Nicolas Meneveau [Orateur], Omar Ider, Sebastien Janin, Romain Chopard, Marie France Séronde, Vincent Descotes-Genon, Francois Schiele, Yvette Bernard
CHU Besançon, Cardiologie, Besançon, France

Aim: To evaluate the prognostic value at 6 months (m) of residual pulmonary vascular obstruction (RPVO) measured at discharge in pts with intermediate- or high-risk PE.

Methods: 416 consecutive pts with intermediate- or high-risk PE who survived the acute phase were prospectively included. Pts with known cardiopulmonary disease were excluded. Perfusion lung scans were performed within 6-8 days after onset of treatment. RVPO was graded as the proportion of lung not perfused. Primary objective was a combined endpoint at 6 m, including death, recurrent PE, appearance of signs of heart failure (HF).

Results: At 6m, 32 patients (7.7%) had ≥1 adverse event: 15 deaths (3.6%), 12 recurrent PE (2.9%), 14 cases (3.4%) of HF. Independent predictors of combined endpoint were: cancer (odds ratio (OR) 4.51 [1.63-12.5]); presence of >=1 risk factor for venous thrombo-embolic disease (OR 4.42 [1.53-12.8]); renal insufficiency at admission (OR 2.91 [1.16-7.27]); persistent ECG signs of cor pulmonale (OR 3.2 [1.11-9.24]); and persistent echographic signs of RV dysfunction (OR 4.99 [1.46-16.31]). Severity of RPVO at discharge was significantly associated with unfavorable outcome (OR 2.56 [1.69-3.87]). The incremental prognostic value of the RVPO information was confirmed by a decrease in the Akaike criterion, and increases in indices of calibration and discrimination when RVPO was added to the multivariate model. The threshold RVPO value for predicting adverse events was estimated at 35% (figure). Pts with RVPO >threshold at discharge had a significantly higher risk of death at 6m (p=0.01).

Conclusion: RPVO evaluated before hospital discharge in pts with intermediate- to high-risk PE is a powerful prognostic factor for outcome at 6m. RPVO ≥35% is associated with an increased risk of adverse events at 6m.

375

Paroxysmal supraventricular tachycardia-related adverse events

Béatrice Brembilla-Perrot [Orateur] (1), Jean-Marc Sellal (1), Pierre-Yves Zinzius (1), Jérôme Schwartz (1), Ibrahim Nossier (1), Soumaya Jarmouni (1), Daniel Beurrier (1), Anne Moulin-Zinsch (2), Pierre Louis (1), Olivier Selton (1), Thibaud Vaugrenard (1), Vladimir Manenti (1), Radou Moisei (1), Arnaud Terrier De La Chaise (1), Simona State (1), François Marçon (2)
(1) CHU Brabois, Cardiologie, Vandoeuvre Les Nancy, France – (2) CHU Brabois, Cardiologie Pédiatrique, Vandoeuvre Les Nancy, France

Paroxysmal supraventricular tachycardia (SVT) is considered as benign. The purpose of the study was to report the prevalence of SVT-related adverse events.

Methods: 1269 patients (pt), aged from 6 to 93 years with a normal ECG in sinus rhythm were recruited for SVT, confirmed by electrophysiological study. Pts with anterograde conduction through accessory pathway (AP) were excluded. SVT-related adverse events were collected.

Results: Adverse event occurs in 207 pts (16%) (group I, gr); 10 of them had a very serious event (gr I A): resuscitated ventricular fibrillation was provoked by SVT in 1 pt with coronary heart disease (HD), 1 pt with hypertrophic cardiomyopathy; 1 pt 55 years old, with respiratory failure, died after a prolonged SVT. Six pts presented resuscitated cardiac arrest after antiarrhythmic drugs used to stop SVT (sotalol, verapamil). 197 pts presented with a poorly-tolerated SVT (gr I B), syncope (148), acute coronary syndrome (36), tachycardiomyopathy (6), stage IV of heart failure (5), inappropriate shock at ICD (1), collapsus after verapamil (1). Gr I was compared to pts without adverse events (gr II). Gr I was older than gr II (55±20 vs 49±18 years)(p<0.003). Male gender was more frequent in gr IB (53%) than in gr II (38%) (p<0.02). Underlying HD was more frequent in gr I (32%) than in gr II (6%) (p<0.0000). The rate in tachycardia did not differ (183±41 bpm in gr I, 186±35 in gr II). SVT mechanism was similar: reentry in a concealed AP was noted in 19 % of gr I and II. Typical and atypical AV nodal reentrant tachycardias represented other causes. In gr II, 2 ablation-related deaths in old women and one sudden death 2 months after ablation were noted among 663 patients who had SVT ablation.

Conclusions: SVT-related adverse events occurred in 16% of patients. Advanced age, male gender and presence of HD were predisposing factors. However, life-threatening arrhythmias were rare and represented less than 1 %. Most of them were drug-related.

376

Levosimendan as a weaning strategy from inotropes

Didier Bresson [Orateur] F Sibellas, C Petitpe, O Bastien, Jj Lehot, V Cart-Regal, L Sebbag, E Bonnefoy
USIC-Hôpital Cardiologique Louis Pradel, Bron, France

Aims: Due to its prolonged declining clinical effect, levosimendan might help in weaning patients dependent on inotropes. We assessed the effect of a 24-hour infusion of levosimendan in a cohort of advanced heart failure patients dependent on dobutamine or milrinone.

Methods: In this prospective observational study, 71 patients (pts), aged 58 [IQR: 44-63] years with advanced heart failure (28 ischaemic) and dependant on inotropes (define as failure of >2 consecutive trials in 7 days; dobutamine n=62, milrinone n=9) were included. They received a 24-hour intravenous infusion of levosimendan (0.1 µg/kg/min) in the ICU. 4 of them had an intra-aortic balloon pump. Success was defined as "alive and free from inotrope" at the end of ICU stay.

Results: The median time from hospital admission to beginning of levosimendan infusion was 16 [IQR:5.5-29.2] days. Fifty five pts (76.1%) were alive and free of dobutamine or milrinone 48H after initiation of levosimendan. Four patients failed to receive the full levosimendan amount and 9 patients (16%) had to receive norepinephrine because of hypotension. Atrial fibrillation occurred in 9 pts (12.7%). Median time to stop dobutamine or milrinone was 18 [IQR:4.5-24] hours. Reinitiation of inotropes was needed in 3 pts.

▶

At the end of ICU stay, success was present in 51 pts (71.8%). Median stay in the ICU after levosimendan administration was 4 [IQR:1-9] days. A beta-blocker and an ACE inhibitor were given in 43.1% and 74.5% respectively.

No clinical, biological or hemodynamic characteristics were predictive of failure to wean from inotropes with levosimendan. Overall, 13 pts (18%) died in the ICU and another 12 (17%) died after leaving the ICU during their hospital stay. Heart transplantation was performed in 16 patients within 6 months, 13 of them were in the success group. Failure to wean from inotropes within 48 hours of levosimendan administration was a strong predictor of in-hospital mortality (64% vs 27%; p=0.01).

Conclusions: In patients with advanced heart failure and dependant on dobutamine or milrinone, levosimendan is a valuable therapeutic option to wean these patients off intravenous inotropic support.

377

Predictors of in hospital mortality in patients with refractory cardiogenic shock following acute myocardial infarction despite a patent infarct artery

Batric Popovic [Orateur] (1), Claire Lalevée (1), Charles Christophe (1), Michael Angioi (2), Bruno Levy (3), Etienne Aliot (1)
(1) CHU Brabois, Cardiologie, Vandœuvre Les Nancy, France – (2) CHU Brabois, Vandœuvre Les Nancy, France – (3) CHU Brabois, Réanimation Médicale, Vandœuvre Les Nancy, France

Objectives: We sought to evaluate the impact of post-primary percutaneous coronary intervention (PCI) patent artery in the infarct-related artery in patients with ST-segment elevation myocardial infarction (STEMI) and cardiogenic shock.

Background: Little is known about predictors of survival in patients with persistent shock following STEMI despite a patent infarct artery.

Methods: This retrospective monocentric study included consecutive patients with an early cardiogenic shock complicating STEMI from 2007 to 2010 in our center.

All these patients underwent early PCI: ie up to 36 h from symptoms and only patients with infarct artery patency defined as final TIMI 3 flow were included.

Results: Between 2007 and 2010, 832 patients underwent primary PCI for acute STEMI. We studied specifically a cohort of 84 patients with cardiogenic shock with post-procedure patent TIMI 3 infarct related artery.

The mean age of the patients was 64±13 years. The delay between STEMI diagnosis and cardiogenic shock and open infarct related artery were 4.5 hours and 7 hours respectively.

95% of patients underwent revascularization of the culprit lesion and multisite PCI was performed in 7% of cases.

After PCI, mechanical ventilation was used in 80% of cases and all patients needed inotropes drugs. In two cases, a percutaneous ECMO support was decided.

The in-hospital mortality rate was 44 %. In univariate analysis, pulmonary insufficiency characterized by ratio PaO2/FIO2 (p=0,02), increased serum creatinine (SCr) from baseline-25% (p=0,01) and level of lactates (p<0,01) were significantly associated with increased in hospital mortality.

In multivariate analysis, the ratio PaO2/FIO2 and an increased SCr were independent predictors of in hospital mortality.

At 6 months, the mortality rate was 46%. We noted a coronary revascularization in 6 cases, a implantable cardioverter-defibrillator in 3 cases and a left ventricular ejection fraction –35% in 20 % of patients.

Conclusion: These prognostic variables may be useful for risk-stratification and in selecting patients for investigation of additional therapies

378

Massive pulmonary embolism: clinical features, paraclinical findings and prognosis

Salma Longo [Orateur] (1), Zied Frikha (2), Ma Berriche (3), Baha Alhabil (4), Ihsen Zairi (5), Sofien Kammoun (6), Sana Fennira (5), N Falfoul (3), Z Jerbi (3), Sondos Kraim (7)
(1) Hôpital Habib Thameur, Cardiologie, Tunis, Tunisie – (2) Hôpitaux de Tunis, Cardiologie, Sfax, Tunisie – (3) Hôpital Habib Thameur, Urgences, Tunis, Tunisie – (4) Hôpitaux de Tunis, Tunis, Tunisie – (5) Hôpital Habib Thameur, Tunis, Tunisie – (6) Hôpitaux de Tunis, Tunis, Tunisie – (7) Hôpital Habib Thameur, Cardiologie, Tunis, Tunisie

Introduction: Massive pulmonary embolism is defined as occlusion of more than 50% of the pulmonary vasculature or occlusion of two or more lobar arteries.

Purpose of work: Describe the clinical features, paraclinical findings and prognosis of patients with massive pulmonary embolism.

Materials and methods: It is a single-center study, retrospective, covering 145 patients hospitalized in the emergency department of the hospital Habib Thameur in the period from January 2000 to December 2007 with a pulmonary embolism. We divided our patients into 2 groups: one group with a massive pulmonary embolism (MPG+) and a group without (MPG-).

Results: The diagnosis of massive pulmonary embolism was retained in 23 patients that is 21.3%. no features patient's specificities (age, sex and underlying pulmonary defects) were significantly related to massive pulmonary embolism. Clinical examination showed that (MPG+) had a respiratory rate (RR) and heart rate (HR) significantly higher than the (MPG-) (average RR: 27 vs 23, P=0.03) (average HR: 104 vs. 95, P=0.02) .The report PaO2 / FIO2 was significantly lower in the (MPG+) (304 vs. 358, P=0.02). The transthoracic echocardiography was performed in 42 patients (8: MPG+ and 24: MPG-), the echocardiographic characteristics which were significantly associated with massive pulmonary embolism were: right ventricular dilation (P=0.04) and pulmonary artery hypertention (P=0.0006). Massive pulmonary embolism was not significantly related to hospital mortality.

Conclusion: Massive pulmonary embolism does not prejudge the outcome nether clinical consequences nor the prognostic for the patient.