OS-CAD-03
Cardiology

Spanish Registry of Autoimmune Congenital Heart Block in Babies of Mothers Carrying Anti-Ro/la Antibodies (Rebeca-Geas-Semi)

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Background: To analyze the outcomes and therapeutic management of affected pregnancies with autoimmune congenital heart block (aCHB).

Methods: Retrospective multicenter study in Internal Medicine Departments; inclusion criteria consisted of: aCHB of any type (I, II or III), fetal EFE and/or cardiomyopathy, cardiac block diagnosed in utero or in the first postpartum month, and mothers carrying anti-Ro52, Ro60 and/or La autoantibodies.

Results: A total of 25 pregnancies with aCHB were retrospectively analyzed in 21 anti-Ro/La+ mothers. The mean maternal age at the time of pregnancy with aCHB was 33.25 years. Only 2 mothers received treatment prior to the first affected pregnancy (hydroxychloroquine and hydroxychloroquine-prednisone). Cardiac block consisted of type I (n=1), type II (n=4) and type III (n=18). At diagnosis of aCHB, 15/22 women were treated with dexamethasone (one of them, along with the AIG) and 2/22 with prednisone. Preventive treatment with IVIG was administered in 2 pregnancies in which a recurrence was observed. Pregnancy was interrupted in 7/25 pregnancies at a mean week of 23.43 (18.2–37), while 18/25 of pregnancies gave a live birth with a mean age of 35.71 weeks of birth (30–40). 4 babies required pacemaker implantation, 9 immediately after birth and 2 in the neonatal period (1 at 5 years of age and another at 12). Of the 15 pregnancies with aCHB treated with dexamethasone, 12 achieved pregnancy to term (1 type II disappeared, with no changes in the remaining cases) and there were 3 fetal deaths despite treatment. Of the 7 pregnancies not treated with dexamethasone, 3 babies were born alive (no reversal of the blockade) and there were 4 fetal deaths.

Conclusions: aCHB is a serious problem with a fetal mortality of 28% and a high requirement for neonatal pacemaker placement (61%).

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Cardiology

Efficacy of Heart Type Fatty Acids Binding Protein in the Early Diagnosis of Acute Myocardial Infarction: One More Evidence

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Background: early diagnosis improves prognosis in acute coronary syndrome (ACS). Currently applied myocardial necrosis markers are not effective enough in early stages of ACS. Multicenter investigation of clinical efficacy of Early diagnosis of myocardial infarction with cardiac protein, binding fatty acids (HFABP) showed that express-test for qualitative evaluation of heart type fatty acid binding protein (HFABP) is more effective than troponin in patients admitted with suspected ACS. Pre-hospital efficacy of such tests remains unclear.

Purpose: to evaluate efficacy of qualitative measurement of HFABP for differential diagnosis of ACS in ambulance service practice.

Methods: 759 patients (367 men and 372 women, mean age 68.3±10.5 y.o.) with suspected ACS and occurrence of chest pain 1-12 hours were enrolled in the study by 88 ambulance crews of Moscow station of emergency and first medical aid named after A.S. Puchkov. HFABP concentration was evaluated with qualitative immunochromatographic test CardioFABP (BioTest, Russia) before admission. 642 patients (84.6%) had acute myocardial infarction, 117 (15.4%) – other reasons of chest pain. Results: overall sensitivity of CardioFABP test was 88%, specificity – 92%, accuracy – 87%, positive predictive value – 99%, negative predictive value – 56%. In patients with ST-segment elevation (n=503) sensitivity of the test was 89%, specificity – 65%, accuracy – 89%, positive predictive value – 99%, negative predictive value – 89%. In patients without ST-segment elevation (n=237) sensitivity of HFABP test was 80%, specificity – 82%, accuracy – 84%, positive predictive value – 88%, negative predictive value – 80%. Characteristics of the test did not differ significantly in intervals 1-6 and 6-12 hours.

Conclusion: express-test for qualitative evaluation of HFABP has high efficacy in pre-hospital differential diagnosis of ACS and can be recommended for ambulance practice.

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Impact of Renal Dysfunction on Changes of Plaque Characteristics in Statin-Treated Patients with Angina Pectoris and Hypertension

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Background: It is not well known about the relation between renal function and plaque changes in patients with angina pectoris and hypertension who uses statins. We assessed the impact of renal dysfunction on changes of plaque characteristics in statin-treated patients with angina pectoris and hypertension using virtual histology-intravascular ultrasound (VH-IVUS).

Methods: We assessed plaque changes between patients with CKD (n=81), estimated creatinine clearance (CrCl) <60 ml/min) and those without CKD (n=117) who underwent baseline and follow-up VH-IVUS for non-intervened intermediate coronary artery stenosis.

Results: Systolic core (NC) area at minimum lumen area (MLA) (22.5±11.7% vs. 19.5±10.3%, p=0.035) and %NC area (20.3±8.0% vs. 15.8±9.4%, p=0.014) were significantly greater, and thin-cap fibroatheroma was observed more frequently (25.9% vs. 10.3%, p=0.004) in OKD group compared with non-CKD group. Follow-up VH-IVUS was performed in about 9 months after baseline VH-IVUS examinations. At follow-up, plaque progression in OKD group, in contrast plaque regression in non-CKD group (Plaque plus media (P&M) area at MLA site: 0.41±0.72 mm² vs. 0.78±0.64 mm², p<0.001). The CrCl correlated with ΔP&M area at MLA site (r=-0.538, p<0.001) and Δ%NC area at MLA site (r=-0.167, p=0.019). ΔCrCl (OR 0.901, 95% CI 0.867-0.936, p=0.001) and baseline %NC area at MLA site (OR 1.251, 95% CI 1.116-1.403, p=0.001) were the independent predictors of plaque progression at follow-up.

Conclusions: In patients with angina pectoris and hypertension who uses statins, renal dysfunction is associated with plaque progression and increase of NC component at follow-up.

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Erythrocytosis Increased One-Year Mortality in Patients with ST-Segment Elevation Myocardial Infarction Undergoing Primary Percutaneous Coronary Intervention

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Background: Anemia is associated with poor prognosis in patients with ST-segment elevation myocardial infarction (STEMI). However, it is unclear that erythrocytosis has protective effect in these populations. Hence, we conducted a retrospective cohort study to examine the relationship between erythrocytosis and mortality in patients with STEMI undergoing primary percutaneous coronary intervention (PCI).

Materials and Methods: We screened 1,186 consecutive patients with STEMI undergoing primary PCI in a single center during Feb 2007 and January 2012. There were 201 missing data for door-to-balloon time and 4 missing data for hemoglobin. Of 951 analyzable patients, they were divided into anemia (Hemoglobin<13.0mg/dl in men or <12.0mg/dl in women), normal hemoglobin, and erythrocytosis (hemoglobin ≥16.0mg/dl in men or ≥15.0mg/dl in women) groups. The study end point was one-year mortality.

Results: There were 148, 535, and 268 patients in anemia, normal hemoglobin, and erythrocytosis groups, respectively. Patients in the anemia group were older and had lower body mass index than other two groups. There was more female, smokers, hypertension, and diabetes in the anemia group. One-year mortality rates were 16.2%, 6.5%, 2.6% (P<0.001) respectively. In univariate proportional hazards regression analysis, age, hemoglobin, total cholesterol, statin use, glycoprotein IIb/IIIa inhibitor use, and TIMI risk score were associated with 1-year mortality in three groups. After adjustment for potential confounders, hemoglobin levels remained an independent predictor of one-year mortality in both anemia (hazard ratio 0.697, 95% CI 0.528-0.960) and erythrocytosis group (hazard ratio 3.129, 95% CI 1.147-6.642).

Conclusions: Patients with STEMI and anemia had the worst outcomes than normal hemoglobin and erythrocytosis groups. Expectedly, hemoglobin had the protective effect on prognosis in anemia group. However, a hemoglobin level was an independent risk factor of one-year mortality in those with erythrocytosis.