Prescribing cardiac troponin test in general practice: motivations and outcomes. A real-life study

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Methods: We retrospectively retrieved all the C-Tn test requests made by GPs to the 2 major laboratories in our community of 250,000 inhabitants, within a period of 4 months. The GPs were contacted by phone to assess their motivations.

Results: During this period, 306 C-Tn tests were requested by 157 GPs. We excluded 64 cases because of insufficient data. They were comparable to those included in the study in terms of age, gender, and positive test rates. Among the 242 cases studied (median age 70 years, 51% males), 41% had 23 coronary risk factors. C-Tn was requested because of chest pain in 202 patients (83%), 71% had atypical pain. The prescription was made in more than 6 and 24 hours after symptom’s onset in 78% and 55% of cases, respectively. ECG was performed before C-Tn test prescription in only 15% of cases. In 92% of cases, C-Tn test was negative. Among the 18 positive cases, 5 (28%) remained at home (3 very old patients, mean age 91 years, 2 cases considered as false positives). Among the 13 remaining positive cases, 7 were referred directly to cardiologists and 6 to an emergency department. Among these 13 patients, 11 were referred without medical transportation. Only 1 patient was transferred medically directly to the cath lab, 24 hours after chest pain onset.

Conclusion: Cardiac troponin is mainly requested by GPs to exclude acute coronary syndrome in case of atypical chest pain with delayed consultation. However, the positivity of this test was useless in 1 out of 5 patients since it has not changed their management. While in the majority, the C-Tn tests requested by GPs are negative and avoid hospitalization, the management of patients with positive test is delayed and not secured.

Prognostic evaluation of serum iron in acute coronary syndromes

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Purpose: Serum Iron (I) is a cofactor of several enzymes, but also, a mediator of reactive oxygen species production. In literature, the impact of I on prognosis of patients (P) with Acute Coronary Syndromes (ACS) is not well established.

Methods: Prospective study including 228 P with ACS consecutively admitted to a coronary care unit over 6 months. P were excluded if they: didn’t have I measurement (n=26); were under erythropoiesis supplementa-tion (n=0); had had inflammatory disease (n=8) or malignancy (n=7).

Results: Pin the lowest Q had higher prevalence of moderate to severe valvular disease (10,2% vs 2,2% vs 0% vs 0,0%; p=0,012) and less frequently present-ed with Unstable Angina (0% vs 0% vs 4,3% vs 17,4%; p=0,001). At admission, they had more often anemia (80,4% vs 58,7% vs 48,8% vs 43,5%; p=0,014) and signs of heart failure (28,3% vs 24% vs 8,9% vs 8,7%; p=0,004).

They had lower mean corpuscular hemoglobin levels (30,1±2,6 vs 30,7±1,5 vs 30,8±1,5 vs 31,9±3,9; p=0,0002) and higher mean levels of RDW (13,9±1,3 vs 13,6±1 vs 13,4±1 vs 13,2±0,7%; p=0,008), C reactive protein (31,7±3856 vs 2199±2769 vs 2137±2550 vs 1167±190pg/mL; p=0,022). They had more frequently moderate to severe left ventricular systolic dysfunc-tion (41,3% vs 28,3% vs 17,4% vs 17,4%; p=0,035). During hospitalization, 2 P died, and we verified a non-significant trend to higher in-hospital mortality in P in the lowest Q (2% vs 2% vs 0% vs 0%)

The incidence of MACE was significantly higher in the lowest Q (41,7% vs 31% vs 17,4% vs 10,9%; p=0,002). After multivariate logistic regression, inclusion of P in the lowest Q persisted as an independent predictor of in-hospital MACE (OR 4,2; 95% CI 1,27 – 4,45; p=0,019).

Conclusion: Despite the small size of study population, our findings sug-gest that I may be an independent predictor of in-hospital MACE, with the lowest I associated with a worse prognosis. A possible trend to increased mor-tality in this group should be clarified in future studies.

Complete blood count in risk stratification of acute coronary syndromes: a routine blood test, many analytical parameters, which is the best?

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Background: Risk stratification is a key element to treatment optimization and prognostic assessment in acute coronary syndromes (ACS). The aim of the present study was to evaluate and compare the predictive power (PP) of 6 month mortality (6M) of different complete blood count parameters in patients (P) with ACS.

Methods: Retrospective study including P with ACS consecutively admitted to a coronary care unit over 4 years and a minimal 6 month follow-up. In all P the following CBC parameters were evaluated in the first 24 hours: hemoglobin (Hg), hematocrit (Hct), red blood cell distribution width (RDW) and platelets (Pl). In a subgroup of 540 P admitted over a 1 year, mean corpuscular volume (MCV), mean corpuscular hemoglobin (MCH), leukocytes (L) and neutrophils (N) were also evaluated.

Results: We included 1906 P (mean age 64±13y; 49,9% with ST-elevation infarction). The in-hospital mortality was 3,9% and 6M was 8,9%. After calculation of 6M AUC, only Hg (0,712; p<0,001), Hct (0,703; p<0,001) and RDW (0,622; p=0,05) had PP of 6M. There were no statistically significant differences between the PP of Hg, Hct and RDW. From the cut-off values obtained, a multivariate logistic regression model was constructed. Only Hct and RDW persisted as independent predictors of 6M, with an OR of 3,6 (CI 95%; 2,18-40,43; p<0,001) and 2,8 (CI 95%; 1,04-7,67; p=0,04), respectively. In a subgroup of P, in addition to previous parameters, L (0,598; p=0,04) and N (0,619; p=0,014) also had PP of 6M. There were no statistically significant differences between the PP of Hg, Hct, RDW, L and N, with the exception of RDW that had a stronger PP than L (p=0,032). After multivariate analysis, L and N also persisted as independent predictors of 6M, with an OR of 5,1 (CI 95%; 1,42-18,18; p=0,012) and 3,0 (CI 95%; 1,04-8,74; p=0,04), respectively.

Conclusion: CBC is a routine blood test, which includes parameters that without extra costs can be helpful in risk stratification of ACS. In the present study, Hg, Hct, RDW, L and N had PP for 6M in ACS. There were no significa-tive differences regarding the PP of 6M between these variables, with the exception of RDW that had a stronger PP than L.

C-reactive protein and mean platelet volume/platelet count ratio as predictors of ischemic stroke after acute myocardial infarction

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Purpose: Stroke is a serious complication after acute myocardial infarction (AMI) and is associated with an increased risk of death. However, the increased use of evidence-based therapies (ASA, P2Y12 and statins) has reduced the risk of stroke during the last decade. Whereas the pathophysiological mechanisms are not exactly known, increased inflamma-