# NEUROINFLAMMATORY BLOOD MARKERS IN ACUTE ISCHEMIC STROKE. Focus on Prognosis.

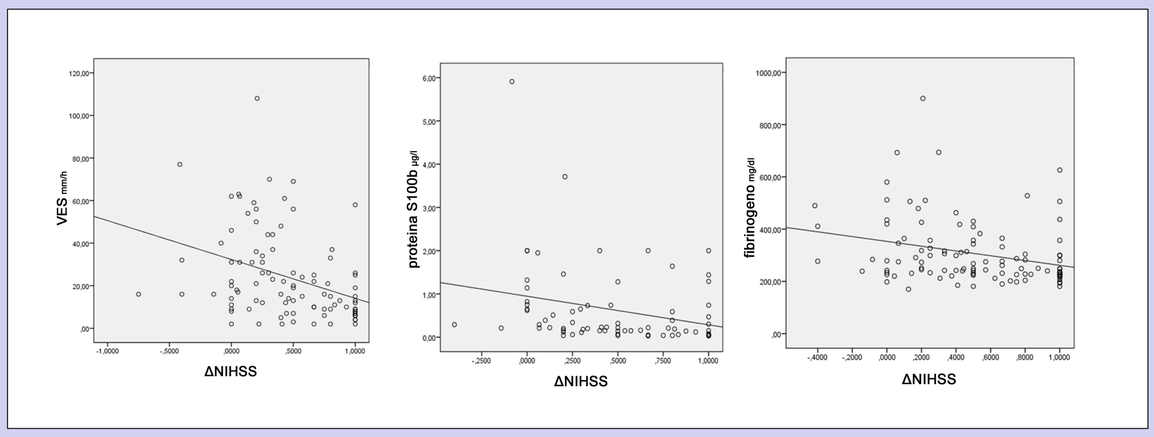
*G.M.de Vincenzo, D.M.Mezzapesa, S.Cepparulo, B.Tartaglione, M.Petruzzellis, F.Federico*
Stroke Unit, Neurology Unit, Department of Basic Medical Sciences, Neurosciences and Sense Organs
University of Bari "Aldo Moro", Italy

***Background:***
Inflammation play an important pathophysiological role in ischemic stroke. High levels of serum biomarkers are the effect of proinflammatory and prothrombotic processes.
Different molecules have been evaluated in the acute phase of ischemic stroke, but no serum biomarker has demonstrated a clinical value. The aim of this study was to evaluate the prognostic role of:
•erythrocyte sedimentation rate (ESR),
•C-reactive protein (CRP),
•Fibrinogen (FBG),
•N-terminal pro-brain natriuretic peptide (NT-proBNP),
•S100b protein.

***Methods:***
We measured blood levels of ESR, CRP, FBG, NT-proBNP, S100b protein at the time of admission, within 24 hours of stroke onset. NIH Stroke Scale (NIHSS) score was evaluated at admission (NIHSS-in) and before discharge. The clinical improvement was quantified using the delta NIHSS (ΔNIHSS) (first NIHSS subtracted the last, all divided by the first).
Correlations have been obtained by the method of partial correlations, excluding the effect of age.

***Patients:***
One hundred thirty-nine patients with acute ischemic stroke (average age 72.99, SD 15.02, 41% man) were enrolled. According to etiological diagnosis 12.8% atherosclerosis of the great arteries, 44.7% possible/probable cardioembolism, 14.2% small vessel disease,detecti; 0.7% other causes; 27.6% not determined. Seventeen patients underwent thrombolytic therapy (12 %), 15 with the intravenous administration of r - tPA , 2 through endovascular approach with stent retrievers. The average values are: NIHSS-in 7.7, NIHSS-out 4.7, ΔNIHSS 0.5, ESR 25.24 mm/h, CRP 35.38 mg/l, S100b pr. 0.84 µg/l, NT-pro BNP 5415.97 pg/ml, FBG 307.52 mg/dl.

***Results:***
•**ΔNIHSS** collerated with **ESR** (r=-0.291, *p*= 0.004), **S100b** (r= -0.233, *p*= 0.050), **FBG** (r= -0.216, *p*=0.026).




•**NIHSS-in** correlated with **ESR** (r= 0.255, *p*= 0.011), **S100b** ( r= 0.345, *p*= 0.003), **FBG** (r= 0.273, *p*= 0.004).

•Age correlated with ΔNIHSS and NIHSS-in.
•Age correlated with all the biomarkers rate (ESR, CRP, FBG, NT-proBNP, S100b protein).
•Women have values of NIHSS-in, FBG, ESR significantly higher than those of men.

•FBG levels were higher in cardioembolic stroke than in the other groups.

***Conclusion:***
**ESR, FBG and S100b protein seems to be a marker of early damage in ischemic stroke, and of poor clinical recovery.** Further careful validation is required for prognostic biomarkers in the acute phase of ischemic stroke.
**FBG could represent a new marker of cardioembolism.** It could be useful in the diagnostic setting of cryptogenetic stroke.

***References:***
Kisialiou A, Pelone G, Carrizzo A et al. Blood biomarkers role in acute ischemic stroke patients: higher is worse or better?. Immunity and Ageing. 2012 Oct. 10.1186:1742-4933-9-22.
Whiteley W, Wardlaw J, Dennis M et al. Blood biomarkers for the diagnosis of acute cerebrovascular diseases: a prospective cohort study. Cerebrovascular Disease 2011 Jul. 32(2):141-7.
Montaner J, Perea-Gainza M, Delgado P. Etiologic diagnosis of ischemic stroke subtypes with plasma biomarkers. Stroke. 2008 Aug. 39(8):2280-7.

Sin
XLVI CONGRESSO NAZIONALE
10-13 OTTOBRE 2015 – GENOVA
WebPoster