CLINICAL PRACTICE AND DECISION MAKING IN ACUTE STROKE

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Introduction

Seric and urinary markers are increased in cerebrovascular conditions, particularly in acute stroke (AS) in the contest of a chronic cerebrovascular disease (CCVD), compared to other neurological diseases (OND) (*intergroup variability*). No significant fluctuations were found within each group of patients at repeated measurements in one week time (*intragroup invariability*) and at different time lag in bounce backs (Fiori P. et al., IHBC, WSC, SIN, 2014, ESO 2015). The aim of our current study is to evaluate the predictive values and the correlations with clinical, echographic and radiological findings.

Methods

So far, we recruited 207 OND (age 47,88 sd 16,28), 596 CCVD (age 77,51 sd 9,05), 738 AS (age 78,16 sd 11,58). We classified them in subgroups according to the severity of neurological and heart dysfunctions, evaluated by Apache score, Glasgow Coma (GCS), Glasgow Outcomes (GOS), Modified Rankin (MRS), CHAD2DS2VAsc, HASBLED, Hachinski scales, New York Heart Association (NYHA) and American Cardiology Association (ACA) scales, Simplified Pulmonary Embolism Severity Index (SPESI), Pulmonary Embolism Severity Index (PESI). Statistical analysis was performed by unpaired T test, ANOVA repeated measures for standard description of baseline characteristics and differences among the studied groups, by Pearson correlation test for identification of association among examined parameters.

Results

The most significant alterations of cardiac and urinary markers were detected in class III/C, IV/C and IV/D NYHA/ACA AS compared to class 0/I patients (* $p < 0{,}001$) (Fig. 1 A and B), especially in patients affected with CCVD, and in unstable CCVD patients. No significant *intragroup* differences were found at repeated measurements. Tro ths, NT-pro-BNP, CRP, ESR, κ and λ chains had positive predictive values of 96%, 93%, 93%, 91%, 88%, 86%, respectively. Correlations were found with CHAD2DS2VAsc, HAS BLED, Hachinski, Apache, GCS, GOS, MRS, echocardiographic parameters, SPESI and PESI, mainly with NT-pro-BNP and ejection fraction.

Discussion

Our data highlight important features within the same category of AS accounting for worst outcomes, restricting therapeutical effectiveness, prolonging hospitalization and predicting bounce backs, above all in patients affected with CCVD and severe cardiac dysfunctions (class III/C, IV/C and IV/D NYHA/ACA). While more sophisticated radiological techniques may show a continuum from physiological to subtle pathological conditions, the other parameters allow early identifying and treating emergencies. Computerized modeling would be useful for better defining the burden, reversibility and lesional load of cerebrovascular disease and for monitoring shared decision making.

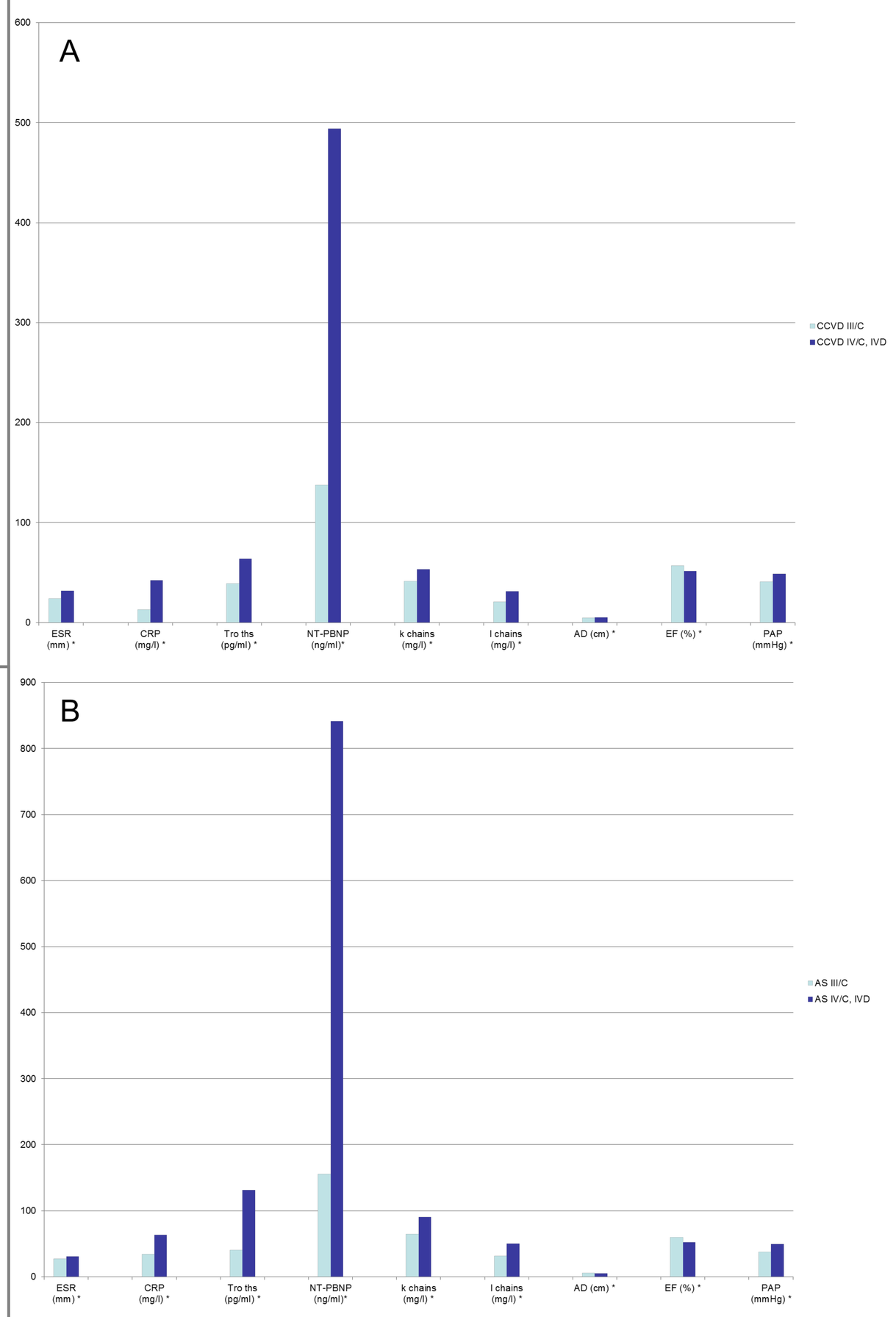

Fig. 1: Levels of seric and urinary parameters in class III/C, IV/C, IV D CCVD (A) and AS (B) patients.

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