

NTproBNP – NEW PROGNOSTIC MARKER IN PATIENTS WITH AKI AND RHABDOMYOLYSIS

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Objectives:

Rhabdomyolysis syndrome is caused by skeletal muscle injury, usually leading to acute kidney injury (AKI). Severe trauma and intense physical exercise have been linked to rhabdomyolysis. Myocardial stress and diastolic left ventricular dysfunction may be generated by intensive exercise, stimulating the production of N terminal probrain natriuretic peptide (NTproBNP). NTproBNP is a biomarker of heart failure, known for potentially monitoring myocardial wall stress. The aim of our study is to find if NTproBNP value correlates with adverse outcome in patients with AKI and rhabdomyolysis.

Methods:

88 patients with AKI and rhabdomyolysis, who were hospitalized in our Department between January 2012 and November 2015, were prospectively enrolled in this study. Serum NTproBNP was measured at admission, in all patients, thus being divided in 2 groups: group A (with increased NTproBNP) and group B (normal NTproBNP). We analyzed statistically if NTproBNP value in group A patients correlates with the number of days of hospitalization, the number of hemodialysis sessions and rate of survival compared with those in group B. Patients with historically diagnosed chronic congestive heart failure were excluded from the study. All patients were homogeneous for age and male/female ratio.

Results:

40 (45.45%) patients (group A) showed high values of NTproBNP at admission, 48 having normal values (group B). Among these, only 3 (7.5%) had chronic congestive heart failure in the past, being excluded from the study – group A (37 patients). The average length of stay for patients from group A was 7.8 days and 5.6 days in those in group B ($p < 0.005$). 54% of the patients in group A compared to 37% in group B, required hemodialysis (HD) ($p < 0.006$). Average number of HD sessions until AKI recovery was 5.7 (group A) and 3.8 (group B) ($p < 0.005$). 6 patients were intubated, all presenting high values of NTproBNP. 4 patients died, 3 having high levels of NTproBNP.

Conclusions:

Elevated NT proBNP in patients with AKI and rhabdomyolysis is associated with a longer hospitalization period, initiating HD and slow recovery (the number of HD sessions is higher in those with increased NTproBNP). We believe that NT proBNP can be considered from the beginning as a marker of worse prognosis in patients with AKI and rhabdomyolysis.

