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Renal prognosis is related with delta neutrophil index in patients with alcoholic ketoacidosis

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Objectives: Delta neutrophil index (DNI), representing an elevated fraction of circulating immature granulocytes in acute infection, has been reported as a useful predictable marker for mortality in patients with sepsis. We make an attempt to reveal clinical characteristics and found prognostic factors including DNI associated with alcoholic ketoacidosis in this study.

Methods:

We investigated patients diagnosed with AKA who visited the ED of WSCH from January 2004 to March 2014 retrospectively. Patients have history of alcohol abuse and recent episode of binge drinking with metabolic acidosis in ABGA and increased serum anion gap in serum chemistry were included. We categorized according to KDIGO Acute kidney injury criteria and compared groups about prognostic factors.

Results: In a total of 357 AKA cases, 293 (82.1%) were diagnosed with AKI by KDIGO criteria: 80 cases (22.4%) were classified as AKI stage I, 70 cases (19.6%) as AKI stage II, and 143 cases (40.1%) as AKI stage III. Mortality was reported in 84 cases (23.6%), and the mean time from admission to mortality was 6.0 ± 10.7 days. Major causes of death included uncontrolled metabolic acidosis (n=46, 54.8%), septic shock (n=26, 31.0%), and gastrointestinal tract bleeding (n=7, 8.3%). There were significant differences in pH, Serum Anion gap, lactate, Hb, platelets, PT, PTT, Na, Cr, albumin, AST, ALT, GGT, Total bilirubin, P, ammonia, T3, fT4, and DNI ($p=0.005$) between survivors and Non-survivors. DNI was higher value in AKI stage III compared with AKI 0 to II stage significantly ($p=0.04$)

Conclusions:

Delta neutrophil index have a significant value in predicting alcoholic ketoacidosis with poor renal outcome and mortality.