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## **Increased delta neutrophil index is associated with in hospital renal survival and mortality in alcoholic ketoacidosis patients**

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**Objectives:** Alcoholic ketoacidosis (AKA) is known as a benign disease, but the related mortality reported in Korea is high. We aimed to evaluate the use of DNI and other standard laboratory parameters as predictors of prognosis in AKA

**Methods:** One hundred eighteen males with AKA were evaluated at the Wonju Severance Christian hospital between 2009 and 2014. We performed a retrospective analysis of demographic, clinical, and laboratory parameters data. Receiver operating characteristic curves (ROC) and multivariate Cox regression were used to identify renal survival and mortality.

**Results:** : Survival patients had lower initial DNI levels than non-survival patients ( $4.8 \pm 6.4$  vs  $11.4 \pm 12.5$ ,  $p < 0.001$ ). In multivariate adjusted Cox regression analysis, higher initial increased DNI (HR 1.044, 95% CI 1.003-1.086,  $p = 0.035$ ), and lower initial pH (HR 0.044, 95% CI 0.004-0.452,  $p = 0.008$ ) were risk factors for dialysis during hospitalization. Further, higher initial DNI level (HR 1.037; 95% CI 1.006-1.069;  $p = 0.018$ ), lower initial pH (HR 0.049; 95% CI 0.008-0.312;  $p = 0.001$ ) and lower initial glomerular filtration rate (GFR) (HR 0.981; 95% CI 0.964-0.999;  $p = 0.033$ ) were predictors of mortality. A DNI value of 4.5% was selected as the cut-off value for poor prognosis and Kaplan-Meier plots showed that AKA patients with an initial level  $\text{DNI} \geq 4.5\%$  had lower cumulative survival rates than AKA patients with an initial  $\text{DNI} < 4.5\%$ .

**Conclusions:** Increased initial serum DNI levels may help to predict renal survival and prognosis in male AKA patients and this is a cost-effective and simple method.

K-M Plots for cumulative renal survival during hospital days

