

## **Delta neutrophil index as a new mortality predictor after liver transplantation**

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**Background:** Infection is a frequent complication of both acute and chronic liver disease. Patients with liver disease have been shown to display numerous defects in the immune system, including impaired monocyte and neutrophil function. And, these infections are independently associated with poor outcomes after liver transplantation. Our objective was to evaluate the delta neutrophil index (DNI), a new inflammation marker, as a predictor of survival after liver transplantation (LT).

**Methods:** We retrospectively evaluated the records of 712 patients who underwent LT from January 2010 to February 2018. This observational study was conducted by using a database analysis of Severance and Gangnam Severance Hospital, Yonsei University College of Medicine. DNI was checked at pre-transplantation, post-operative 1, 7, 14, and 30 days. Other clinical characteristic variables were analyzed. Statistical analysis was performed by using the T-test or chi-square test, and logistic regression analysis.

**Results:** Among 712 recipients, there were 500 males and 212 females. There were 277 deceased donor liver transplantations and 435 living donor liver transplantations. The mean MELD score was  $16.7 \pm 9.4$  (0 ~ 48). There were 125 mortality cases (17.8%) after liver transplantation. Mean DNI was 1.61 at pre-transplantation, 3.94 at post-operative 1 day, 2.67 at post-operative 7 days, 1.61 post-operative 14 days, and 1.64 post-operative 30 days respectively. In multivariate analysis, DNI at post-operative 7 and 14 days were revealed as an independent prognostic factor for mortality after liver transplantation ( $p=0.040$  and  $p<0.0001$ ).

**Conclusions:** The DNI is a simple and reliable predictor of patient mortality after liver transplantation.