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## Neutrophil to lymphocyte ratio as diagnostic marker in neonatal bacterial infection

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Neonatal bacterial infection is a common cause of morbidity and mortality. Early diagnosis and treatment are critical to improve outcome. Recently, neutrophil to lymphocyte ratio (NLR) and platelet to lymphocyte ratio (PLR) are suggested as a systemic inflammatory marker. NLR and PLR is easily calculated and cost effective. The aim of this study was to investigate NLR and PLR as a new diagnostic marker in neonatal bacterial infection. We retrospectively reviewed medical data from 163 infants who admitted at neonatal intensive care unit of National Health Insurance Service Ilsan Hospital in Korea between January 2006 and June 2017. Bacterial group includes 23 neonates with culture-proven bacterial infections in blood, urine or cerebral spinal fluid. Control group consists of 140 neonates with negative culture and normal C-reactive protein (CRP) who were hospitalized for jaundice. White blood cell count, hemoglobin level, platelet count, neutrophil count, lymphocyte count and CRP were recorded. NLR significantly increased in the bacterial infection group (1.88±1.10) compared with the control groups (0.58±0.30) ($p<0.001$). The area under the receiver operating characteristic (ROC) curve for NLR (0.885) was higher than CRP (0.783). ROC curve for NLR revealed a cut-off value of 0.79 with 82.6% sensitivity and 81.4% specificity. PLR in the bacterial group (0.13±0.10) was significantly higher than that of the control group (0.07±0.03) ($p<0.001$). NLR may be a useful marker for predicting neonatal bacterial infection.

### Biography

Ju Hyun Jin has completed her MD from Yonsei University Wonju College of Medicine, South Korea. She is a Neonatologist of National Health Insurance Medical Center, Ilsan Hospital, South Korea. She has few publications about neonatology and she is a Member of Korean Society of Neonatology

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