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Abstract

Early Onset Neonatal Sepsis (EONS) is a significant cause of morbidity and mortality in neonates. It is difficult to establish the diagnosis of early onset neonatal sepsis and the gold standard of establishing sepsis is by microbiology method. Thus, using hematology parameters like immature granulocytes, eosinopenia, and I/T ratio can be used as markers to diagnose sepsis more efficient, faster and inexpensive. The aim of this study is to evaluate if immature granulocytes, eosinopenia, and I/T ratio could be used as markers to diagnose EONS in neonates with bacterial infection. Blood samples were taken from 35 neonates patients’ veins. The patients admitted to the Neonatal Intensive Care Unit (NICU) of the Dr Soetomo Hospital were 0-6 hours old with a high risk of bacterial infection and received no antibiotic treatment, this study was cross sectional. Immature granulocytes, eosinopenia and I/T ratio were analyzed separately using automatic analyzer instrument. Whole blood was taken from patients’ umbilical cord for culture. Then, value of immature granulocytes, eosinopenia and I/T ratio were compared to the blood culture results. From 35 neonatal samples, IG showed a sensitivity of 38.1%, specificity 64.3%, positif predictive values (PPV) 61.5%, and negative predictive values (NPV) 40.9%. Eosinopenia showed a sensitivity of 28.6%, specificity 100%, PPV 100% and NPV 48.3%. I/T ratio showed a sensitivity of 23.8%, specificity 85.7%, PPV 71.4% and NPV 42.7%. IG showed the most sensitivity value and eosinopenia showed the most specificity value for detection of EONS.

Keyword: immature, granulocytes, eosinopenia, I/T, ratio, early, onset, neonatal, sepsis,

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