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Interleukin-6 and Nitric Oxide Levels in Neonatal Sepsis

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Abstract: Aim: The objectives of this study were to compare interleukin-6 (IL-6) and nitric oxide (NO) levels in newborns with culture-proven sepsis with levels in age- and gestational age (GA)-matched controls, and to investigate the correlation between mediator levels and circulatory functions in the septic group. Materials and Methods: Samples for IL-6 and NO levels were obtained from newborns with blood culture-proven sepsis before the beginning of antibiotic therapy and on the 3rd day of treatment. Heart rate, blood pressure and other treatment modalities including inotropic support were also recorded. Age- and GA-matched newborns without infection were included as controls. Minitab 13.0 was used for statistical analysis. Results: Eighteen septic and 23 control patients were included in the study. IL-6 and NO levels were significantly higher in septic patients, and low blood pressure as a sign of the circulatory effects of sepsis was found to be negatively correlated with IL-6 levels on the 3rd day of treatment in newborns with septic shock. No correlation was found between clinical findings and NO levels. Conclusions: IL-6 and NO levels were high in septic newborns as expected; however, circulatory findings were only correlated with IL-6 levels on the 3rd day of treatment in the septic shock group, suggesting that systemic inflammatory response syndrome (SIRS) is an ongoing process during infection in this subgroup. NO probably plays its major role much earlier as a defense mechanism in the complex chain of events during SIRS.

Key Words: Nitric oxide, IL-6, newborn, sepsis

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