Background and Aim The aim of this study was to investigate any changes in mean platelet volume (MPV) in patients with neonatal sepsis (NS).

Methods Consecutive newborns diagnosed with sepsis between March and July 2011 were included in the study. Subjects were stratified into two groups; proven sepsis (Group 1a) and clinical sepsis (Group 1b). The control group (Group 2) consisted of healthy newborns matched for gestational age and birth weight. Sequential measurements of white blood cell count (WBC), platelet count (PC), MPV, interleukin-6 (IL-6) and C-reactive protein (CRP) were compared between groups, and the diagnostic value of each marker for neonatal sepsis was evaluated.

Results A total of 100 patients with neonatal sepsis (35 with proven sepsis and 65 with clinical sepsis) and 50 healthy controls were enrolled. A comparison of markers of sepsis obtained at baseline revealed WBC, CRP, IL-6 and MPV levels to be significantly higher in newborns with sepsis compared to healthy controls (p=0.01, < 0.001, < 0.001 and 0.001, respectively). Mean baseline serum levels of CRP and MPV were significantly higher in Group 1a compared to Group 1b (p=0.005, p=0.007, respectively), whereas the difference between group with regards to baseline serum levels of IL-6 and PC was statistically insignificant (p=0.14, p=0.28, respectively).

Conclusions This is the first study to demonstrate a statistically significant difference with regard to baseline MPV values between patients with sepsis (proven or clinical) and healthy controls. We believe that MPV could be a useful marker for the diagnosis of NS.

Conclusion High serum MPV levels in addition to CRP levels may be helpful in the diagnosis of newborns suspected to have sepsis.