Plasma levels of TOS, TAS and OSI were significantly higher in patients with neonatal sepsis before therapy as compared to the control group (p<0.000, p<0.000 and p<0.000, respectively) and plasma PON-1 level was significantly lower (p<0.000). TAS levels in after treatment were significantly higher than in the control group (p = 0.009), while TAS, OSI and PON-1 levels were similar in after treatment compared to control group (p = 0.078, p=0.597, p=0.086, respectively).

**Objective** Urinary neutrophil gelatinase-associated lipocalin (uNGAL) has been suggested as a useful marker in recent studies for diagnosis of sepsis in pediatric and adult patients. We aimed to determine the value of uNGAL levels in early diagnosis of late-onset sepsis in preterms, and to compare CRP and PCT.

**Materials and Methods** Between February - May 2011, preterm infants admitted to NICU between the ages of 7 to 28 days divided into two groups: 24 cases with clinical sepsis (gestational age 32.88±1.45w) and 20 cases as control group (gestational age 33.41±9.4w).

**Results** There is no difference in two groups in terms of demographic features of babies. At 1. and 7. days of treatment in sepsis group, CRP (median:25.09mg/Lv≤8.63mg/L), PCT (median: 17.11ng/mlv≤1.39ng/ml) and uNGAL levels were found 45.69±18.37ng/ml, 7.89±4.19ng/ml respectively. In control group, uNGAL levels were found 5.78±4.19ng/ml. We found significant differences CRP, PCT and uNGAL levels between groups. On the seventh day of treatment, CRP, PCT and uNGAL levels significantly decreased.

We found that the sensitivity, specificity, positive and negative predictive values, respectively: for CRP, 58.3%, 80%, 77.8% and 61.5%, for PCT; 91.7%, 75%, 81.5% and 88.2%, for uNGAL; 91.7%, 100%, 100% and 90.9%.

**Conclusion** Urinary NGAL seems to be more sensitive and specific, reliable biomarker than serum CRP and PCT. We believe that uNGAL unlike other biomarkers that does not require a blood sample, non-invasive and non-sterile conditions, with small amounts of urine collection in newborn sepsis might be an ideal biomarker.

**Background and aims** The aim of this study was to investigate the value of pro-adrenomedullin (pro-ADM), as a marker of neonatal sepsis while comparing it with conventional markers of infection in newborns.

**Methods** Subjects were stratified into three groups; proven sepsis (Group 1a) and clinical sepsis (Group 1b) and the control group (Group 2) consisted of gestational age and birth weight matched newborns. Sequential measurements of white blood cell (WBC) count, C-reactive protein (CRP), interleukin-6 (IL-6) and pro-ADM were compared between groups.

**Results** A total of 76 patients with neonatal sepsis (31 with proven sepsis and 45 with clinical sepsis) and 52 healthy controls were enrolled. Mean baseline serum levels of CRP, IL-6 and pro-ADM were significantly higher in both Group 1a and Group 1b compared to healthy controls (p<0.001 for both). Although mean baseline CRP and IL-6 levels were similar between groups, mean baseline pro-ADM level was higher in the proven sepsis group than the clinical sepsis group (p<0.001).

**Conclusion** This is the first clinical study to investigate the value of pro-ADM for the diagnosis of proven and clinical sepsis in a newborn cohort including preterm newborns. Use of pro-ADM in combination with other acute phase reactants such as CRP and IL-6 for the diagnosis and follow-up of patients with neonatal sepsis has high sensitivity and specificity.