



**SPECIFICITY AND SENSITIVITY OF BIOLOGICAL MARKERS IN NEONATAL EARLY ONSET INFECTION**

Background: very frequently the fetus reacts to the maternal infections during the pregnancy. According to the current Guidelines, all newborns horn of mothers with some detected risk factors have to the treated by antibiotics until exclusion of the infection, because the late treatment leads to adverse outcome.

On the other hand, it is very difficult to confirm neonatal infections because of subtle and atypical clinical manifestations, and low sensitivity and specificity of biological markers. The objective of this study was to determine the sensitivity and specificity of the White blood cells count (WBC) and C-reactive protein (CRP), the correlation between granulocyte count/percentage and CRP. Methods): 3000 consecutively born term newborns were investigated. Inclusion criteria for the study were: maternal risk factors for infection listed in the evidence based Guidelines, clinical/ laboratory/ microbiological proof for infection.

All of them were worked out completely, and antibiotics given immediately after taking blood for laboratory/microbiological testing, ["he blood for WBC and CRP was taken every second day until normalization. Results: 37/3000 term newborns were proven with early onset infection (1,23%). WBC count was elevated in 31/37 (83.8%), granulocytes percent over 70% in all 37 newborns, and CRP on the first day was elevated (>5 mg/1) in 5 cases (understandably, because of the late seroconversion).

On the third day. WBC count was normalized in 25/31(80,6%) newborns, granulocyte percent in 21/37 (56,7%). and CRP was elevated in 15 more cases (total 20 cases. 54.1%). 3 of them with normal WBC and 2 with normal granulocyte number. On the day 5. all newborns had normal WBC, normal granulocytes in 16/21 (76.2%). and normal CRP value in 12 newborns.

All newborns had normal clinical appearance. The results showed high sensitivity rate of the granulocytes and WBC in the early onset of infection (83%). and low sensitivity rate of CRP (63%). The specificity for the WBC was 78%, for the granulocyte percent was 82%. and for CRP value only 42%.

The coefficient of correlation between granulocytes and CRP was 0.56 which belongs to the medium level. Conclusion: although the sample size was not representative enough, it could be suggested that the WBC count and granulocyte number/percentage are more sensitive markers of neonatal early onset infection compared to CRP. Sometimes the CRP value can e\en mislead the physician to continue the treatment unnecessarily, which can also cause adverse effect to the treated patient. So. it is very hard to the physician to make decisions for the treatment ceasing in the cases with normal clinical manifestations, normal WBC and granulocytes, but slightly elevated CRP. which was the last normalized marker.