Objective: We aimed to study plasma levels of insulin like growth factor-1 (IGF-1), vascular endothelial growth factor (VEGF) and erythropoietin (EPO) in chord blood and to investigate their relationship to retinopathy of prematurity (ROP).

Materials and Methods: Prospective study was carried out on 93 infants with gestational age under 32 weeks or birth weight under 2000 gr. EPO, VEGF and IGF-1, samples were collected from cord and were reserved at -80 C. Infants were classified according to international ROP classification. Levels of VEGF were determined using ELISA, IGF-1 and EPO using chemiluminescence method.

Results: 57 of 93 infants had ROP. Median serum levels of growth factors were; IGF-1 23,3 ng/ml (18,6 - 40 ng/ml), VEGF 985,45 pg/ml (182,57 – 2839,25 pg/ml) and EPO 6,07 mU/ml (2 -90 mU/ml). Median serum levels of growth factors in infants with ROP disease were IGF-1 21,50±4,6 ng/ml, VEGF 939,12±5,2 pg/ml and EPO 5,46±1,2 mU/ml. Comparison of serum levels in infants with and without ROP disease gave no significant relationship. There was no relationship between IGF-1 and VEGF or EPO, but statistically significant correlation revealed between VEGF and EPO (p=0,034, r=-0,25). Correlation between growth factors and risk factors was found to be statistically insignificant.

Conclusion: There was no significant relationship between development of ROP and cord blood levels of IGF-1, VEGF and EPO.