The role of erythropoietin (EPO) as one of systemic angiogenic factors in pathogenesis of diabetic retinopathy (DR) is still not precisely defined. The aim of this study was to analyze concentration of EPO in the blood of diabetics with DR, to evaluate does it significantly change comparing to healthy subjects, and to examine possible correlation of clinical stage of DR with change of EPO level in the blood.

Group of diabetics (DM duration? 10 years, no other eye or systemic disease) consisted of 30 nonproliferative (NPDR) and 30 proliferative (PDR) patients. Control group included 30 healthy individuals. Concentration of EPO in the blood was assessed by ELISA method.

The highest average concentration of EPO in serum (9.95 mIU/ml) is determined in group of diabetics with PDR, and the lowest (6.90 mIU/ml) in control group. EPO concentration in serum is significantly higher in subgroups of moderate and severe PDR comparing to controls, NPDR and mild PDR (h=9.858, p=0.007). Multiregression analysis showed that increase of EPO concentration in the blood for 1 mIU/ml, increases probability of proliferative stage of the disease in patient with DR for 11.8%.

Significantly elevated serum concentration of EPO in advanced stages of DR, and positive correlation between EPO serum concentration and clinical stadium of PDR found in our study, suggest that erythropoietin presents one of the systemic growth factors which also plays role in DR pathogenesis, especially in the proliferative stage of this disease.