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Erythropoietin level and left ventricular dysfunction in patients on chronic hemodialysis

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Chronic renal failure leads to hypo-regenerative anemia due to erythropoietin (EPO) deficiency, but endogenous EPO is increased in patients with left ventricular dysfunction (LVD). Previous only a few-scale data addressed the clinical and prognostic value of EPO levels in relation to LVD in patients on chronic hemodialysis (HD). This study aimed to investigate the serum EPO levels in the context of LVD in chronic HD patients. We studied 71 patients on chronic HD without adult cystic kidney disease, renal cancer, other malignancies, active hepatitis or primary lung disease, divided in group A with left ventricular ejection fraction (LVEF) <50% 19 patients, group B with LVEF >50% 52 patients and group C all investigated 71 patients. The serum EPO, brain natriuretic peptide (BNP), C-reactive protein (CRP) levels and echocardiographic parameters were measured. Group A and group B were comparable in regard the serum hemoglobin, urea, creatinine, CRP levels, hematocrit, doses of recombinant human EPO, duration of HD ($p>0.05$). The serum EPO and BNP levels in group A were significantly higher than that in group B ($Z=-4.99$, $p<0.001$, $Z=-3.1$, $p<0.01$, respectively). In group A we found a significant positive correlation between the serum EPO and BNP levels ($r_s=0.67$, $p<0.05$), but no in group B. Between LVEF and the serum EPO and BNP levels we no found correlation in group A and group B, but in group C exists clearly negative correlation between LVEF and the serum EPO and BNP levels ($r_s=-0.36$, $p<0.05$, $r_s=-0.67$, $p<0.001$, respectively). Between the serum CRP and EPO and BNP levels, we no found any correlation in all groups. In conclusion, chronic HD patients with LVD have higher serum EPO levels than that without LVD. Thus, EPO may serve as an important serum biomarker for discrimination of LVD in chronic HD patients. In general population, elevated serum EPO levels are associated with an impaired prognosis.

Biography

Slobodan Davinic is currently the Head of the Department of Nephrology General Hospital, Leskovac. She has participated in several conferences and symposiums in the country and abroad. She is a permanent Member of European Society of Nephrology, Dialysis and Transplantation (ERA/EDTA).

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