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Levels of presepsin and mid region-proadrenomedullin in septic patients with end-stage renal disease after cardiovascular surgery: 1-year follow up study

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Procalcitonin (PCT) is a marker for sepsis diagnosis, identification of bacterial infection and monitoring of antibiotic therapy. It has been shown that PCT is not a good choice in patients with hemodialysis. Therefore, we have explored two biomarkers: a) presepsin, and, b) mid region-proadrenomedullin (MR-proADM) in patients having end-stage renal disease (ESRD). We prospectively enlisted 20 patients, who underwent cardiovascular surgery and had been on dialysis. The diagnosis of sepsis has been established clinically and confirmed by PCT. Blood samples were taken before and after dialysis. Additionally, plasma and sera of 10 healthy blood donors without any complications were used as controls. Presepsin plasma concentrations (4368 ± 3088 pg/mL) were significantly higher in patients with sepsis compared with controls ($p < 0.0001$), but without significance between survivors and non-survivors ($p = 0.77$). Circulating levels of MR-proADM (4.15 ± 2.72 nmol/L) were also elevated in ESRD patients ($p > 0.05$) with no significance between alive and deceased ($p = 0.53$) patients. Adjustments have shown that the difference for MR-proADM level is due to the random sampling variability ($p = 0.989$), whereas difference for presepsin remained highly significant ($p < 0.001$). Our results indicate that the accuracy of new biomarkers is equal to that of PCT in patients with ESRD but, measuring presepsin might be a good marker in repeated measurements, before and after dialysis, in contrast to PCT.

Biography

Vera Maravic-Stojkovic has completed her Ph.D. at the age of 41 years from Belgrade University and postdoctoral studies from Medizinische Hochschule Hannover, Germany. She is the Head of Laboratory Services in Dedinje Cardiovascular Institute, Belgrade Serbia. She has published more than 75 papers in reputed journals and has been serving as a member of the Heart and Liver Transplant Team in Serbia.

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