

ABSTRACT

THE RELATIONSHIP BETWEEN SERUM LEVEL OF INDOXYL SULFATE WITH DURATION OF UNDERGOING HEMODIALYSIS IN PATIENTS WITH CHRONIC KIDNEY DISEASE (CKD) AT dr. SOEBANDI HOSPITAL

BACKGROUND: Indoxyl sulfate belongs to the group of protein-bound uremic toxin and accumulate as renal function declines. Several studies have demonstrated that indoxyl sulfate induce vascular inflammation, endothelial dysfunction, and vascular calcification, which may explain the association with the development of CVD and death in CKD patients. Indoxyl sulfate is poorly removed by hemodialysis and may accumulate in the serum in patients undergo hemodialysis.

OBJECTIVES: to analyze the correlation between serum level of indoxyl sulfate with duration of undergoing hemodialysis in CKD patients at dr. Soebandi Hospital.

METHODS: This was an observational cross sectional prospective study that analyzed correlation between serum level of indoxyl sulfate with duration of undergoing hemodialysis in CKD patients. Blood samples were taken immediately before hemodialysis. Serum levels of indoxyl sulfate were measured using ELISA Sandwich. The correlation analysis was performed by using Pearson Test, or Spearman's Rho Test if data were not normally distributed.

RESULT: There were 54 patients who met the inclusion and exclusion criteria. The mean serum level of indoxyl sulfate was $37.062 \mu\text{g/mL} \pm 23.205 \mu\text{g/mL}$. The serum level of indoxyl sulfate was significantly and positively correlated with duration of hemodialysis treatment ($r = 0.343$ and $p < 0.05$).

CONCLUSION: There were positive correlation between serum levels of indoxyl sulfate with duration of undergoing hemodialysis in CKD patients. Patients undergoing longer hemodialysis may lead to higher serum level of indoxyl sulfate.

Key words: Indoxyl sulfate, hemodialysis, CKD, protein-bound uremic toxin.