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Influence of Blood Flow Rate on Kt/V in Hemodialysis patients

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Title of the article: Influence of Blood Flow Rate on Kt/V in Hemodialysis patients

Abstract:

Aims: The aim of this study was to assess the effect of increasing blood flow rate during hemodialysis (HD) on the adequacy of dialysis.

Settings and Design: Observational study

Methods and Material: In this study, 166 patients on maintenance HD were assessed. Body weight and Vurea levels before HD sessions were recorded on all the study patients. Important parameters such as volume of ultrafiltration, the duration of dialysis, dialyzer blood flow rate, dialysate flow rate, type of vascular access, dialyzer surface area and amount of urine output were collected and documented in a checklist Kt/V were determined at three different blood pump speeds, i.e., group 1- 250mL/min, group 2- 300 and group 3- 350 mL/min. During HD, hemodynamic status and vital signs of patients were monitored and controlled.

Statistical analysis used: SPSS 16 version will be used for analysis and demographic characteristic will be analyzed using descriptive statistics.

Results: Results show that increasing blood flow rate has a significant impact on Kt/V and hence on dialysis adequacy. Mean of group one is 1.35 ± 0.37, mean of group two is 1.59 ± 0.36 and mean of group three is 1.7 ± 0.37 and it is statistically significant between groups. There was a statistical significance between group as determined by One-Way Anova. CF (2,163) = 5,746 ($p = 0.004$). There was a statistically significant difference between groups two and three, according to a post hoc Bonferroni test. ($p < 0.01$).

Conclusions: According to our findings, increasing blood flow rate from 250mL/min to 350mL/min and dialysate flow rate from 500mL/min to 800mL/min results in a substantial increase in Kt/V and dialysis adequacy.