

Poster presentation

## Comparison of cognitive functioning between patients receiving hemodialysis versus peritoneal dialysis

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### Background

Patients suffering end stage renal disease (ESRD) are vulnerable to exhibit cognitive deficits due to uremia or other medical parameters. Several studies demonstrated that hemodialysis and peritoneal dialysis have beneficial effects on attention, psychomotor speed, memory and several cognitive domains. The purpose of this study was to investigate differences regarding cognitive functioning among patients suffering ESRD, comparing two treatment methods: hemodialysis vs. peritoneal dialysis.

### Materials and methods

We studied 65 adults who had ESRD to discern whether method of treatment would influence performance on the Words Learning Test, the Story Recall Test, the Trail Making Test parts A and B, the WAIS-III Digit Span, and the Greek Verbal Fluency Test. Patients were divided into two groups according to the treatment they were receiving: the hemodialysis group (HD) comprising 41 patients aged  $61.30 \pm 13.77$ , and the peritoneal dialysis group (PD) consisting of 24 patients aged  $69.04 \pm 11.90$ . The two groups were matched on sex and education but differed significantly on age ( $p = 0.026$ ).

### Results

Significant differences were found between the two groups concerning all neuropsychological measures, but the Trail making Test (both parts). Scores on Words Learning, Words Recognition, and immediate recall of the story were lower in PD group. Based on the results of the Verbal Fluency Test the PD group produced significantly fewer words on both semantic and phonemic tests than patients treated with hemodialysis. The PD group also scored

lower on the Digit Span Test. Controlling for age the statistical significant difference disappeared for all variables examined.

### Discussion

The differences presented regarding the above-mentioned neuropsychological variables appears related to the effects of aging rather than the treatment method. Both treatment methods seem to equally improve cognitive functioning in patients suffering ESRD.