Abstract:
Up to 70% of hemodialysis patients over the age of 54 have relevant cognitive impairment. No standardized protocol for the evaluation and monitoring of this population is available today. We hypothesized that the dialysis procedure and the testing environment induce fluctuations of cognitive performance. 26 hemodialysis patients were randomly tested using the Montreal Cognitive Assessment (MoCA) before, during and after hemodialysis and inside the dialysis room or alone in a separate room. Tests were performed at weekly intervals using five test variations to prevent learning effects. The Mini-Mental State Examination (MMSE) was performed as a reference test. MoCA scores significantly differed between the conditions: 'before hemodialysis' revealed the best MoCA score as compared to 'during hemodialysis' or 'after hemodialysis' (p = 0.013). During the combined condition 'before dialysis AND separate room', best performance was achieved (p < 0.001). The BP decline had no significant influence on cognitive performance, whereas the fluid shift showed a significant impact (p = 0.008). Cognitive performance in hemodialysis patients highly depends on the time point and testing environment. Therefore, we strongly suggest a standardization, using the MoCA before hemodialysis in a
separate room, in order to make testing results of future research in this field comparable.