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P358 -The Effect of Dialysis Modality Choice on Cognitive Functions in Patients with End Stage Renal Failure : A Systematic Review and Meta-analysis

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Introduction:

Cognitive dysfunction is one of the major consequences of end stage renal disease and has detrimental effect on quality of life for these patients. The prevalence of cognitive impairment in ranges from 29% to 80% in the dialysis population. There is a knowledge gap about the effect of different modalities of renal replacement therapies on cognitive dysfunction. Peritoneal dialysis is potentially a gentler form of dialysis compared to hemodialysis, more continuous, more physiologic and thus can lead to less cognitive dysfunction. The aim of this meta-analysis is to assess the effects of peritoneal dialysis versus hemodialysis on cognitive dysfunction.

Methodology:

We performed a systematic review in different databases to identify studies and research work that assessed effect of different dialysis modalities on cognitive functions. Inclusion criteria for our meta-analysis were all studies that compared effect of peritoneal dialysis on cognitive functions compared to intermittent hemodialysis. Data collected were the name of the first author, journal title, year of publication, country where the study was conducted, number of patients in the peritoneal dialysis and hemodialysis arms, methods of assessment of cognitive functions. Random effects model was used for the meta-analysis. Funnel plot and Galbreith plot analysis were used to assess publication bias.

Results:

Out of 200 abstracts reviewed in different databases, 11 papers were included in our meta-analysis. 1263 patients were included in the analysis. Forest plot analysis for the rate of cognitive impairment in different dialysis modalities showed less cognitive impairment in peritoneal dialysis population compared to hemodialysis patients. (relative risk =0.82, confidence interval ranging between 0.73 and 0.95). Average weight of the included studies ranged from 1.25% to 45.1%. There was no evidence of heterogeneity in the repeat forest plot analysis (I -squared =0.00%, P=0.49). There was no evidence of publication bias among the studies included in the forest plot analysis.

Conclusion:

Patients on peritoneal dialysis show less cognitive dysfunction compared to those on hemodialysis. More randomised-controlled studies are needed to endorse these results.