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Dialysis

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The association between body mass index and mortality in peritoneal dialysis patients

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Background: Unlike the general population, a higher body mass index (BMI) was consistently found to be a strong predictor of decreased mortality in patients with end-stage renal disease who receive maintenance hemodialysis (HD). This phenomenon has been referred to as the "Obesity paradox" or "reverse epidemiology". Similar tendency has been observed in several studies with peritoneal dialysis (PD) patients, but the studies have reported conflicting results. We conducted this study to evaluate the association between BMI and all-cause mortality in PD patients.

Methods: A systematic search was conducted for published studies in Medline, EMBASE, and the Cochrane library databases from 1970 to April 2015. We identified the studies evaluating the impact of BMI on mortality among PD patients. Data of hazard ratios and 95% confidence intervals (CIs) were obtained for respective BMI groups provided by each study. We performed meta-regression analysis using unrestricted maximum likelihood model.

Results: The Medline, EMBASE, and the Cochrane library search provided a total of 3,047 articles. After screening of all titles, 513 abstracts were selected. Finally, 9 cohort studies with 33,090 patients were included in the final analysis. Log hazard ratio for all-cause mortality showed a trend negatively associated with increasing four square root of BMI (slope coefficient: -0.1976, 95% CI -0.4110 to 0.0158, p= 0.0695).

Conclusion: In PD patients, BMI was inversely associated with mortality as in HD patients. Other outcomes such as cardiovascular death, peritonitis incidence, and technical failure will be additionally evaluated.

Keywords: body mass index, meta-regression analysis, Mortality, peritoneal dialysis