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Risk factors for cardiovascular death in urgent-start peritoneal dialysis patients: a multicenter retrospective cohort study

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Objectives : Urgent-start peritoneal dialysis (USPD) has been identified as the efficient approach to initiate renal replacement treatment in end-stage renal disease patients. Cardiovascular mortality of urgent dialysis is an important issue.

Methods : We carried out the present multicenter retrospective cohort study in five centers from Northeast China, including the A, B, C, D and E hospital. We enrolled adults initiating PD between January 1st, 2013 and 31st, December 2019, and excluded those who had insufficient records, or initiated PD after 2 weeks following catheter insertion. The enrolled patients were followed up till the occurrence of one or more events below: technical failure, death, loss-to-follow-up, and renal transplantation.

Results : There were altogether 1549 cases enrolled into this work., and 123 encountered cardiovascular death. Upon multivariate regression, predictors of cardiovascular death included advanced age (HR 1.045, 95% CI [1.031, 1.060]; $p < 0.001$), higher eGFR (HR 1.084, 95% CI [1.052, 1.117]; $p = 0.001$), combined with DM (HR 1.471, 95% CI [1.026, 2.110]; $p = 0.036$), and advanced HF stage (class III versus class 0-I, HR 5.262; 95% CI [3.281, 8.437]; $p < 0.001$; class IV versus class 0-I, HR 6.409; 95% CI [4.145, 9.912]; $p < 0.001$). In addition, the predictors of cardiovascular death in diabetic USPD patients included advanced age (HR 1.052, 95% CI [1.027, 1.078]; $p < 0.001$) and advanced HF stages (class III versus class 0-I, HR 7.843; 95% CI [4.249, 14.476]; $p < 0.001$; class IV versus class 0-I, HR 5.285; 95% CI [2.880, 9.698]; $p < 0.001$). The predictors of cardiovascular death in elderly USPD patients were advanced age (HR 1.045, 95% CI [1.016, 1.075]; $p < 0.001$) and advanced HF stages (class III versus class 0-I, HR 3.407; 95% CI [1.911, 6.073]; $p < 0.001$; class IV versus class 0-I, HR 5.039; 95% CI [2.982, 8.516]; $p < 0.001$).

Conclusions : Risk factors related to cardiovascular death included advanced age, higher eGFR, combined with diabetes, and advanced heart failure stages among USPD patients.