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The incidence and risk factors of depression in patients with renal replacement therapy: A nationwide population-based study

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Objectives:

Depression is one of the common mental health problems in patients with end-stage renal disease(ESRD). Depression can lead to increased mortality and cardiovascular disease in patients with ESRD. Therefore, diagnosis and treatment of depression is an important issue for patients with ESRD.

Methods:

We analyzed a nationwide database acquired from the Korean Health Insurance Review and Assessment Service from 2007 to 2016. In order to screen patients for renal replacement therapy(RRT) in this database, we used a procedure code specifically prescribed for each RRT patient. For the screening of depression patients, the International Classification of Diseases, 10th revision code and antidepressant prescriptions were used in combination.

Results:

11,365 patients who started RRT(hemodialysis 9,232, peritoneal dialysis 1,256, kidney transplant 877) between 2008 and 2009 in Korea were analyzed. During the follow-up period, depression occurred in 3,511 patients (38.03%), 274 patients (21.82%) and 29 patients (3.31%) in the hemodialysis, peritoneal dialysis and kidney transplantation groups, respectively. The cumulative incidence of depression among the three groups was significantly higher in the hemodialysis group and lowest in the kidney transplantation group. Compared with the hemodialysis group, the risk of depression in the peritoneal dialysis group(HR 0.681, $p < 0.0001$) and the kidney transplantation group(HR 0.047, $p < 0.0001$) was significantly lower than that of hemodialysis group by 31.9% and 93.3%, respectively. The risk factors of depression in hemodialysis group were age, male gender, medical aid, Charlson comorbidity index(CCI) ≥ 1 . The risk factors of depression in peritoneal dialysis group were age, medical aid, CCI ≥ 1 . The risk factors for depression in kidney transplantation group were only CCI ≥ 1 .

Conclusions:

Hemodialysis patients were at significantly higher risk of developing depression than peritoneal dialysis or kidney transplanted patients.