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The effect of dementia screening tests on subsequent kidney function in the elderly

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Objectives: Previous cross-sectional and longitudinal studies have demonstrated that chronic kidney disease is associated with an increased risk for cognitive impairment at baseline and cognitive decline over time in older adults. However, it is unknown whether older people with subjective cognitive decline would be more likely to subsequently develop kidney dysfunction.

Methods: From the Korean National Health Insurance Service-National Elderly cohort database, this study included 111,846 subjects older than 60 years who completed the Korean Dementia Screening Questionnaire-Prescreening (KDSQ-P) or –Cognition (KDSQ-C) between 2007 and 2015. The association between subject cognitive decline and the incidence of kidney dysfunction was investigated during the follow-up.

Results: After adjusting for potential confounding factors, the risk of kidney dysfunction, defined as a decline of more than 30% in estimated glomerular filtration rate, was significantly lower in elderly without subjective cognitive decline based on both KDSQ-P results (HR=0.892, 95% CI 0.852-0.935, $p < 0.001$) and KDSQ-C (HR=0.934, 95% CI 0.877-0.996, $p=0.048$) compared to those with subjective cognitive decline. The number of outpatient visits and admission as well as newly diagnosed cardio-metabolic disorders significantly increased in subjects with subjective cognitive decline after taking the dementia screening tests, indicating that a positive answer on the responses to KDSQ-P or KDSQ-C would have led to an increase in healthcare service utilization.

Conclusions: Subjects aged 60 years and older diagnosed as having suspicious cognitive dysfunction from dementia screening programs tend to have more preserved renal function probably through improvements in appropriate medical care with increased health concerns.