

# KSN 2016 Abstract Submission

## *CKD & associated complications*

### **Increased risk of death, cardiovascular and infection-related adverse outcomes in chronic kidney disease patients with dementia**

Yi-Ting Lin<sup>1,4,5</sup>, Ming-Yen Lin<sup>2,3</sup>, Teng-hui Huang<sup>3</sup>, Shang-Jyh Hwang<sup>2,3</sup>,

Jer-Chia Tsai<sup>2,3</sup>, Hung-Chun Chen<sup>2,3</sup>

<sup>1</sup>Institute of Clinical Medicine, College of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan

<sup>2</sup>Faculty of Renal Care, College of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan

<sup>3</sup>Division of Nephrology, Department of Internal Medicine, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan

<sup>4</sup>Department of Family Medicine, Kaohsiung Medical University Hospital, Kaohsiung, Taiwan

<sup>5</sup>Department of Family Medicine, Kaohsiung Municipal Hsiao-Kang Hospital, Kaohsiung, Taiwan

**Backgrounds:** Dementia increases all-cause of mortality, cardiovascular events, and infection events in general population but data are sparse regarding the clinical impact of dementia on patients with chronic kidney disease (CKD). This nationwide cohort study aimed to investigate the mortality, cardiovascular and infection risks of dementia on CKD patients.

**Methods:** We enrolled CKD patients from the multidisciplinary team care pay for performance (P4P) program, a part of National Health Insurance Research Database from 2009 to 2011. There were 1406 CKD patients with dementia and 4179 non-depression controls using 1:3 matched by age and sex. Patients were followed to death, loss follow up, dialysis, or the end of 2012. The primary outcomes were all-cause mortality, cardiovascular events (hospitalizations of acute coronary syndrome, heart failure, ischemic stroke, or hemorrhagic stroke, and Out-of-hospital cardiac arrest) or infection events (sepsis, septic shock, pneumonia, lung abscess or empyema, or respiratory failure with mechanical ventilator use). Cumulative incidences and hazard ratios of primary outcomes were calculated after adjusting for competing mortality. Residual confounding was assessed by sensitivity analysis.

**Results:** CKD patients with dementia had a significantly higher cumulative incidence of mortality (20.98% vs. 12.95%; incidence rate ratio (IRR): 1.70; 95% confidence interval [CI]: 1.48 - 1.96), cardiovascular events (24.18% vs. 19.38%; IRR: 1.29; 95% CI: 1.14 - 1.46), and severe infection events (34.49% vs. 22.59%; IRR: 1.66; 95% CI: 1.49 - 1.86) than those without dementia. Multivariable Cox regression analysis showed dementia as an independent risk factor for death (adjusted hazard ratio [aHR]: 1.47; 95% CI: 1.27 - 1.71), cardiovascular events (aHR: 1.21; 95% CI: 1.05 - 1.38), and severe infection events (aHR: 1.45; 95% CI: 1.29 - 1.63) in CKD patients after adjusting for comorbidities and clinical characteristics. Further stratified analysis and sensitivity analysis confirm the results.

**Conclusion:** These findings suggest that CKD patients with dementia are associated with increased all-cause mortality, cardiovascular and infection events. Further studies are warrant to confirm the results.

**Key words:** chronic kidney disease, dementia, mortality, cardiovascular risk, infection risk