

Abstract Submission No.: A-0015

Kidney outcomes associated with adherence to recommendation from Evidence-based Clinical Practice Guidelines for CKD in real-world clinical practice: A nationwide, cross-sectional cohort study using the Japan CKD Database Ex

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Objectives : Adherence to recommended treatment is critical in chronic kidney disease (CKD) to prevent complications and progression to kidney failure. The purpose of this study was to explore the adherence to recommendation of patients with CKD, using the Japan Chronic Kidney Disease Database (J-CKD-DB-Ex).

Methods : We developed clinical questions (CQ) recommendation scoring from Clinical Practice Guidelines for CKD. (Table) We quantified adherence to each of the 8 component metrics, with metric scores ranging from 0 points (poor adherence to recommendation) to 8 points (meeting recommendation). Kidney failure defined estimated glomerular filtration rates (eGFR) <15 mL/min/1.73m² or eGFR ≥30% reduction. We evaluated the adherence of CQ recommendations and the decline of eGFR and composite kidney outcomes by the Cox proportional hazards models adjusted for age, sex, and eGFR baseline.

Results : Among 4,455 CKD patients, mean age was 67.2 years, mean eGFR was 54.6 mL/min per 1.73 m², and women was 46.5 % at baseline. Scores of CQ recommendation of 0-5 points group was 12.0%, 6 points group was 29.3%, 7 points group was 41.1%, 8 points group was 17.6%. 838 composite kidney outcomes occurred, more than 6 points groups were at significantly lower risk (6 points: HR 0.67, 95% CI 0.54–0.83).

Conclusions : Great adherence of CQ recommendations, especially in a multidisciplinary fashion, was associated with prevention of complications and progression to kidney failure.

Table.jpg

Variables	1 point	0 point
(A) Serum Potassium (mmol/L)	≤ 5.4	> 5.4
(B) Sodium - Chlorine (mmol/L)	≥ 33	< 33
(C) Administration of RAS inhibitors	Yes	No
(D) Serum Calcium (mg/dL)	≥ 8.4	< 8.4
(E) Serum Phosphorus (mg/dL)	≤ 6.0	> 6.0
(F) Uric acid (mg/dL)	< 7.0	≥ 7.0
(G) Low-density lipoprotein cholesterol (mg/dL)	< 120	≥ 120
(H) Hemoglobin (g/dL)	≥ 11.0	< 11.0