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Validation of the kidney failure risk equation in adult Filipino patients with chronic kidney disease: a single center study

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Objectives: The 4-variable kidney failure risk equation (KFRE) is a simple tool for prediction of 2-year and 5-year risk of end stage kidney disease (ESKD). This equation has been validated in several cohorts, including Southeast Asia, however, Philippines is not one of the countries included in the validation. The purpose of this study is to validate the 4-variable KFRE in a Filipino population as ethnic and socioeconomic differences may be contributory to the rate of eGFR decline.

Methods: A total of 6,551 patients referred to Nephrology from 2013-2017 were assessed for eligibility. Adult patients with CKD on the presence of kidney damage or eGFR < 60 ml/min/1.73 m^2, with urine protein-to-creatinine (PCR) and creatinine determination at baseline and with repeat serum creatinine during the follow up period (2 years and 5 years) were included. The 4-variable KFRE was applied incorporating age, sex, eGFR and albumin-to-creatinine ratio (ACR). Primary outcome is ESKD, which is defined as initiation of kidney replacement therapy (KRT). Discrimination and calibration were used to evaluate predictive accuracy of the 4-variable KFRE.

Results: A total of 200 CKD G3a-G5 patients were included in the analysis. The 4 variable KFRE provides good discrimination at 2 years with AUC of 0.952 and at 5 years with AUC of 0.89. Calibration was also consistently adequate for predicting ESKD at 2 years and 5 years.

Conclusions: The original 4 variable KFRE showed good discrimination and adequate calibration in CKD stages G3a-G5 patients in a Filipino cohort. It is an acceptable and useful tool in predicting ESKD to guide Nephrology referrals and KRT planning.

Figure 1. AUC of 4 variable KFRE for 2-year risk prediction

Figure 1. AUC of 4 variable KFRE for 2-year risk prediction for the whole cohort

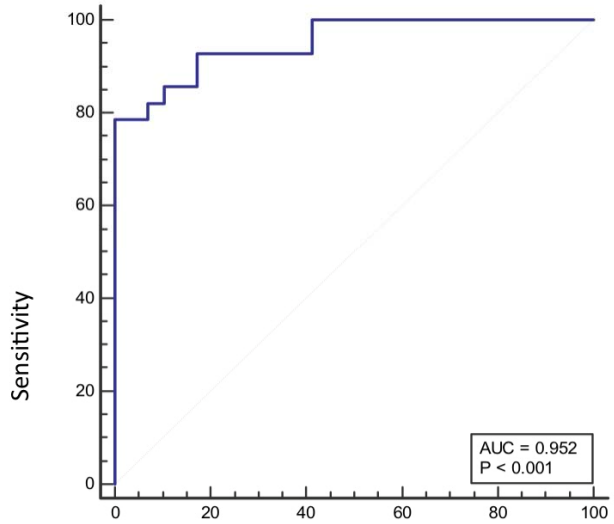

Figure 2. AUC of 4 variable KFRE for 5-year risk prediction

Figure 2. AUC of 4-variable KFRE for 5-year risk prediction for the whole cohort