KSN 2020
FULLY VIRTUAL MEETING

Abstract Type : Oral
Abstract Submission No. : OR-1290

Validation of international prediction model including Oxford classification in Korean patients with IgA nephropathy

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Objectives: Although Oxford classification is well validated histologic score to predict renal outcome, it has not been included in risk prediction model for patients with IgA nephropathy. Recently, new risk prediction model including Oxford classification was published which was validated in large multi-ethnic cohort. Therefore, we aimed to validate this risk prediction model in Korean patients with IgA nephropathy.

Methods: This study was conducted with 585 patients with IgA nephropathy in three medical centers. Primary outcome was a composite of 50% decline of estimated glomerular filtration rate (eGFR) or end-stage renal disease (ESRD). Continuous net reclassification improvement (NRI) and integrated discrimination improvement (IDI) was used to validate models.

Results: During mean 4.5 years of follow-up, 56 (9.6%) renal events occurred. In multivariable Cox regression model, M1 (hazard ratio [HR], 2.33; 95% confidence interval [CI], 1.07-5.08; P = 0.034), T1 (HR, 2.99; 95% CI, 1.40-6.40; P = 0.005), and T2 (HR, 4.81; 95% CI, 2.07-11.16; P < 0.001) lesions were associated with increased risk of renal outcome. When applied international prediction model, the area under curve (AUC) for 5-year risk of renal outcome was 0.73 (95% CI, 0.64-0.81), which was lower than previous validation (0.82; 95% CI, 0.81-0.83). Moreover, the AUC of international model was lower than AUC derived from clinical parameters of our cohort (0.87; 95% CI, 0.80-0.93). Nevertheless, adding Oxford classification to clinical parameters showed better prediction performance by continuous NRI (0.44, 95% CI, 0.10-0.63; P = 0.02) and IDI (0.10; 95% CI, 0.01-0.17; P = 0.02).

Conclusions: The international risk prediction model for IgA nephropathy showed not as good performance in Korean patients as previous validation in other ethnic group. However, inclusion of Oxford classification showed better prediction performance than using clinical parameters alone. Therefore, new risk prediction model validated with large cohort is needed for Korean patients with IgA nephropathy.