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Title: Clinical Predictors of Major Adverse Kidney Disease Events in Patients with IgA Nephropathy

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Background: IgA nephropathy (IgAN) is a glomerular disease that may progress to kidney failure. While albuminuria/proteinuria and low eGFR have been associated with greater risk, other predictors are less clear. The study aim was to use real world data to assess clinical predictors of major adverse kidney disease events (MAKDE) in patients with IgAN.

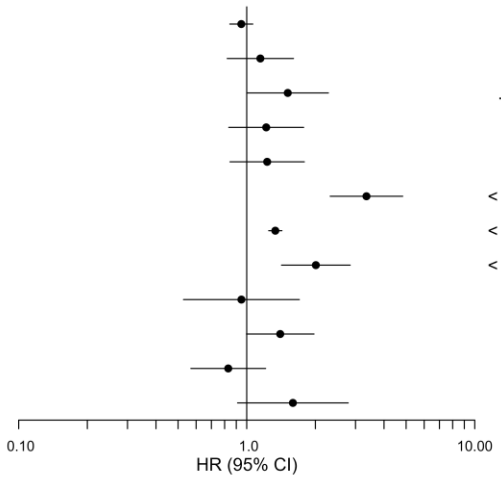
Methods: The source population was derived from electronic health records data in the Center for Kidney Disease Research, Education, and Hope (CURE-CKD) Registry at Providence and UCLA Health systems. Demographics, clinical characteristics, and prescriptions were obtained for adults ≥18 years old with IgAN in 2016-2020. Kaplan Meier survival analysis and Cox proportional hazards models evaluated MAKDE: 40% eGFR decline, eGFR <15 mL/min/1.73 m^2, and administrative codes for kidney failure, dialysis, or transplant.

Results: Patients with IgAN (N=1,099) were 50% (n=554) women and 55±18 (mean±SD) years old. At baseline, mean eGFR was 76±28 mL/min/1.73 m^2 (Chronic Kidney Disease Epidemiologic equation 2021); median urine albumin/creatinine ratio (UACR) and urine protein/creatinine ratio (UPCR) were 119 (interquartile range 28-519) mg/g and 0.7 (0.3-1.9) g/g, respectively. Renin angiotensin system (RAS) inhibitors and corticosteroids were prescribed to 49% (n=538) and 25% (n=278), respectively. By 3 years, MAKDE occurred in 13% (n=144). Predictors of MAKDE were hospitalization, diabetes, Asian race, RAS inhibitor use, and lower eGFR (**Figure**). In a sensitivity analysis model including baseline UACR/UPCR measurements (n=335), levels above versus below the median had an adjusted hazard ratio of 2.10 (95% confidence interval 1.07-4.11).

Conclusion: MAKDE were common and occurred quickly in patients with IgAN. Asian race identity and illness severity reflected in hospitalization, diabetes, RAS inhibitor use, and reduced kidney function predicted these events.

Predictors of Major Adverse Kidney Disease Events

Predictors	Hazard Ratio (HR), 95% CI	P value
Age (per 10 years)	0.95 [0.84, 1.06]	.36
Sex (female vs male)	1.15 [0.82, 1.60]	.42
Race (Asian vs Non-Asian)	1.51 [1.00, 2.28]	.048
Insurance (noncommercial vs commercial)	1.22 [0.83, 1.78]	.31
Providence vs UCLA Health	1.23 [0.84, 1.79]	.28
Hospitalization (yes/no)	3.35 [2.32, 4.83]	< .001
eGFR (per -10 mL/min/1.73 m²)	1.33 [1.25, 1.43]	< .001
Diabetes (yes/no)	2.01 [1.42, 2.84]	< .001
Hypertension (yes/no)	0.95 [0.53, 1.70]	.86
ACE inhibitor/ARB (yes/no)	1.40 [1.00, 1.97]	.05
Corticosteroid (yes/no)	0.83 [0.57, 1.21]	.33
Other Immunomodulator (yes/no)	1.59 [0.91, 2.79]	.10



RAS inhibitors (ACE-Angiotensin-converting Enzyme; ARB-Angiotensin II Receptor Blocker); eGFR-estimated Glomerular Filtration Rate