THE KOREAN SOCIETY OF NEPHROLOGY
APCN & KSN 2024
June 13(Thu) - 16(Sun), 2024 Coex, Seoul, Korea
APSN
Promoting Sustainable Kidney Health: The Asia-Pacific and Beyond

Abstract Submission No.: A-0790

Assessing the Risk of Poor Renal Outcomes in Taiwanese IgA Nephropathy Patients Using the International IgAN Prediction Tool: a single center retrospective study

Chia-Tien Hsu, Shang-Feng Tsai, Cheng-Hsu Chen
Department of Internal Medicine-Nephrology, Taichung Veterans General Hospital, Taichung, Taiwan

Objectives : IgA nephropathy is the most common primary glomerulonephritis worldwide. To manage IgA nephropathy effectively, identifying high-risk patients is vital. The 2021 KDIGO guidelines recommend the International IgAN Prediction Tool to inform patients but not as a guide to therapy. This study aims to assess the risk of poor renal outcomes in Taiwanese IgA Nephropathy patients using the International IgAN Prediction Tool.
Methods : A retrospective analysis of medical records from biopsy-confirmed IgA nephropathy patients at our medical center in Taiwan between January 2010 and December 2020 was conducted. Comprehensive clinical, pathological, and laboratory data were reviewed. The primary outcome was a composite of the first occurrence of either ESRD (eGFR <15 mL/min/1.73m^2, dialysis, or transplantation) or areduction in eGFR to below 50% of the value at biopsy. Receiver Operating Characteristic (ROC) curves and the Area Under the Curve (AUC) value were used to assess the predictive performance of the International IgAN Prediction Tool.
Results : Our study enrolled 210 patients (49% males, 51% females), with a median age of 40.9 years. At 3 years post-renal biopsy, 33 patients (15.7%) reached the primary endpoint. Table 1 revealed that patients with elevated blood pressure, lower eGFR, increased daily proteinuria, lower serum albumin, and higher predicted risk have poorer renal survival. Figure A demonstrated that patients reaching the primary endpoint had a significantly higher predicted risk score (13.11% vs. 2.21%; $p < 0.001$). Figure B illustrated an AUC of 0.892 ($p < 0.001$) for the International IgAN Prediction Tool, with an optimal cut-off value of 3.57% for our cohort.
Conclusions : The International IgAN Prediction Tool demonstrated good performance in predicting poor renal outcomes in Taiwanese patients with IgA nephropathy. These findings suggest its utility as a valuable tool for identifying high-risk individuals. However, further research is essential to validate its role as a guide for therapeutic interventions.

Table 1.jpg

Table 1. Comparison of clinical and pathological characteristics, and predicted risk using the International IgAN Prediction Tool

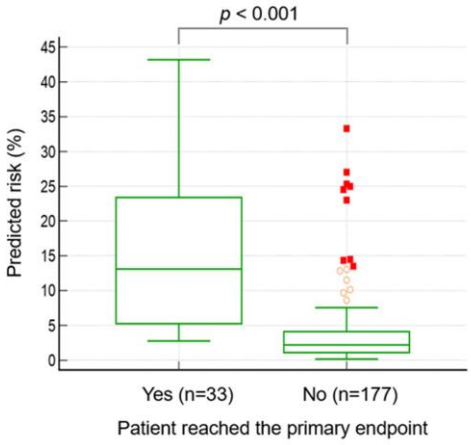
	Did the patient achieve the primary composite endpoint three years after renal biopsy?				
	Yes (n=33)		No (n=177)		*p* value
Clinical characteristics at biopsy					
Age	44.2	(35.0-53.4)	39.8	(30.2-51.1)	0.068
Male sex	14	(42.4%)	89	(50.3%)	0.408
Body mass index	22.5	(21.1-25.9)	24.1	(20.9-27.7)	0.539
Systolic blood pressure	134.0	(127.8-147.3)	130.0	(118.0-140.0)	**0.048***
Diastolic blood pressure	86.1	(82.5-89.7)	80.3	(78.4-82.2)	**0.014***
Usage of ACEi or ARB	18	(54.5%)	79	(44.6%)	0.296
Usage of immunosuppressants	7	(21.2%)	18	(10.2%)	0.073
eGFR (mL/min/1.73 m^2)	25.1	(18.5-33.2)	68.7	(46.1-97.3)	< **0.001****
Proteinuria (g/d)	1.94	(1.15-3.03)	1.03	(0.44-1.95)	< **0.001****
Blood urea nitrogen (mg/dL)	35.0	(26.5-42.0)	17.0	(13.0-22.0)	< **0.001****
Serum creatinine (mg/dL)	2.53	(1.98-3.16)	1.10	(0.80-1.57)	< **0.001****
Serum albumin (g/dL)	3.7	(3.3-3.9)	4.0	(3.7-4.2)	< **0.001****
Uric acid (mg/dL)	7.7	(6.5-9.5)	6.3	(5.0-7.9)	< **0.001****
WBC (10^9/L)	6.80	(5.88-8.17)	7.78	(6.14-9.28)	0.068
Hemoglobin (g/dL)	11.2	(10.3-12.3)	12.9	(11.7-14.2)	< **0.001****
Platelets (10^9/L)	237.0	(169.5-274.5)	249.0	(213.5-299.3)	0.058
Duration of follow-up in years	4.17	(2.59-6.77)	5.47	(4.32-7.72)	**0.015***
Oxford Classification					
M-1	28	(84.8%)	98	(55.4%)	< **0.001****
E-1	19	(57.6%)	39	(22.0%)	< **0.001****
S-1	30	(62.9%)	111	(56.3%)	**0.002****
T-1/ T-2	13(39.4%)/ 8(24.2%)		26(14.7%)/ 4(2.3%)		< **0.001****
C-1/ C-2	0(0%)/ 3(9.1%)		21(11.9%)/ 1(0.6%)		< **0.001****
Predicted risk evaluated using the International IgAN Prediction Tool (%)					
For 3 years after renal biopsy	13.11	(5.26-23.39)	2.21	(1.11-4.11)	< **0.001****
For 2 years after renal biopsy	7.34	(2.89-13.46)	1.21	(0.61-2.25)	< **0.001****

For continuous variables, the independent-samples t test was used if the data were normally distributed, and if not, the Mann–Whitney U test was used. Categorical data are represented were compared using the chi-square test. *p<0.05, **p<0.01. Values are expressed as Number (percentage) or Median (Interquartile range). ACEi Angiotensin converting enzyme inhibitors; ARB Angiotensin receptor blockers; eGFR Estimated glomerular filtration rate.

Table 1.jpg

A.

Risk prediction and events at 3 years



B.

Assessing the risk of a 50% decline in eGFR or progression to ESRD 3 years after renal biopsy