Title：

Prediction of Outcomes of Crescentic IgA Nephropathy in a Multicenter Cohort Study

Authors

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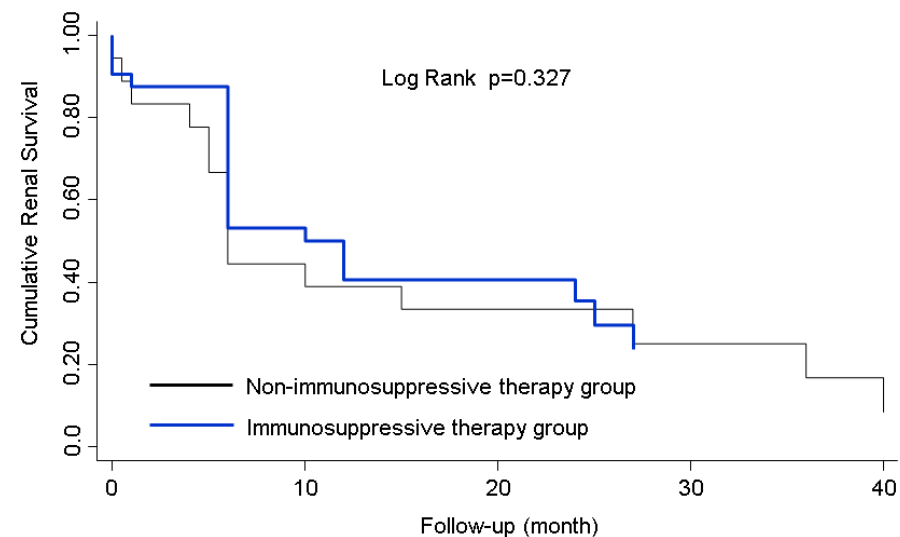[6]Renal Division, Guang'anmenHospital, China Academy of Chinese Medical Science, Beijing, China
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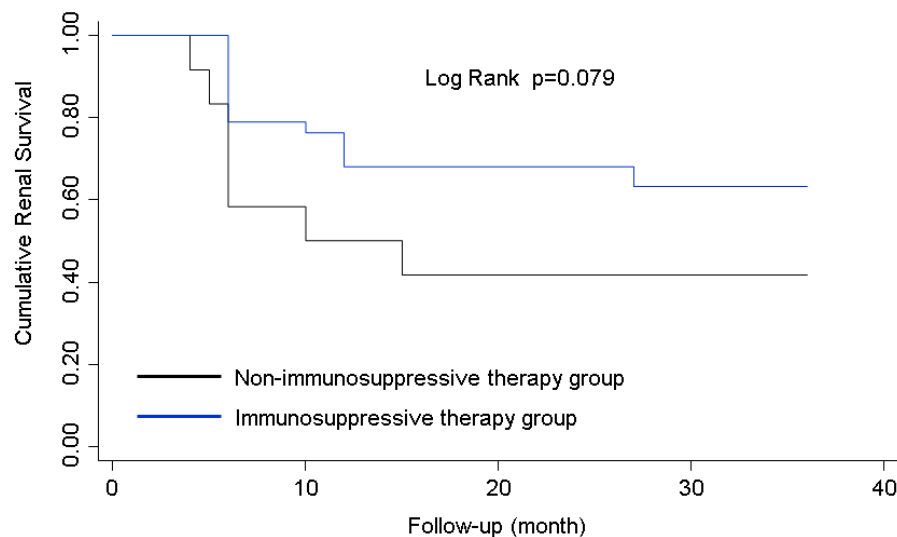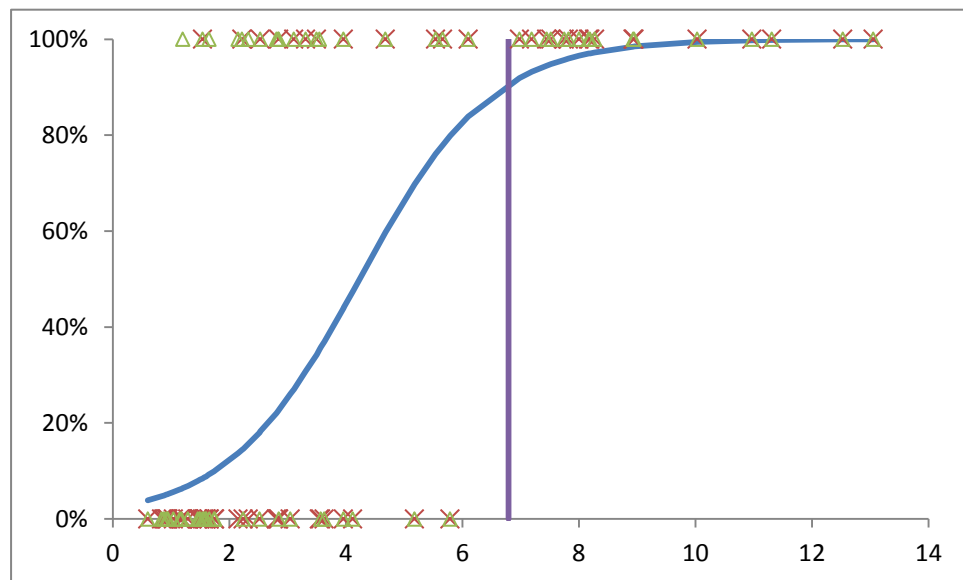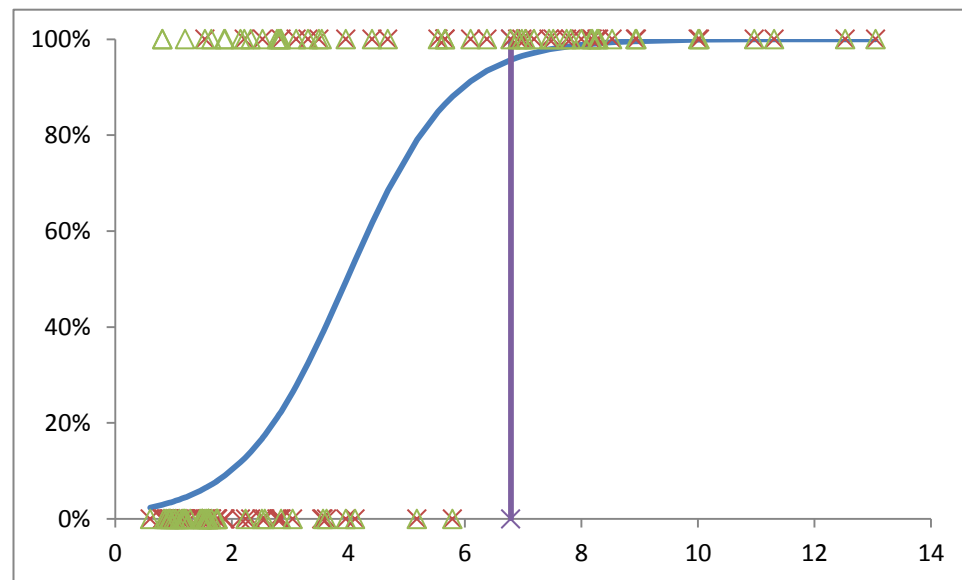
Supplementary Figure 1A

Supplementary Figure 1B

Supplemental Figure 1: Renal survival among patients receiving aggressive immunosuppressive or non-immunosuppressive therapy in patients with crescentic IgA nephropathy.

There's trend a immunosuppressive therapy reduced the risk of ESKD in population with high active lesions (cellular or frocellular crescents >50% of total glomeruli, supplementary Figure 1A) with borderline significance (p=0.079) while not in those with mainly chronic lesions (tubular atrophy or interstitial fibrosis >50%, supplementary Figure 1B, p value =0.327)

A

B

Supplemental Figure 2: Logistic regression curves for crescentic immunoglobulin A nephropathy

Blue line: logistic curve

Purple line: serum creatinine (SCr) concentration = 6.8mg/dl(600μmol/l)

Red crosses: renal survival at 1 year after renal biopsy. A value of 0% means that the patient did not develop end-stage renal disease (ESRD), while 100% means that the patient developed ESRD.

Green triangles: renal survival during follow-up. A value of 0% means that the patient did not develop ESRD, while 100% means that the patient developed ESRD.

A: Logistic curve of patients with cellular + fibrocellular crescents >50%;Logistic regression revealed that the function to estimate risk of ESRD at one year was:

$$p = \frac{e^{-3.743+0.923Scr}}{1 + e^{-3.743+0.923Scr}}$$

While Scrproceeds 5.97mg/dl (527.7μmol/L), the estimated risk of ESRD at one year proceeds 90%.

B: Logistic curve of patients with cellular + fibrocellular / total crescents >50%.Logistic regression revealed that the function to estimate risk of ESRD at one year was:

$$p = \frac{e^{-4.380+1.102Scr}}{1 + e^{-4.380+1.102Scr}}$$

While Scr proceeds 5.97mg/dl (527.7μmol/L), the estimated risk of ESRD at one year proceeds 90%.

Supplemental Table 1: Comparison of clinical and pathological parameters of crescentic IgA nephropathy patients with or without immunosuppressive therapy

Parameter	Aggressive immunosuppressive therapy[a]	Steroid only	Cytotoxic agent only	Without immunosuppressive therapy	*P* value
N of Patients	57	21	3	32	
Clinical Baseline					
Male (N, %)	34, 59.6%	17, 81.0%	2, 66.7%	13, 40.6%	0.034
Age (years)	35.8±15.0	37.8±18.6	31.3±19.7	36.5±13.1	0.893
History (months)	14.6±29.0	8.3±13.9	1.0±0.0	2.9±5. 4	0.844
Macrohematuria (N, %)	17, 29.8%	3, 14.3%	1, 33.3%	5, 15.6%	0.313
MABP (mmHg)	114.8±18.2	121.3±18.3	122.2±16.9	122.1±23.4	0.248
Hypertension (N, %)	41, 71.9%	17, 81.0%	2, 66.7%	19,59.4%	0.387
Serum creatinine (mg/dl)	3.8±3.0	5.4±3.9	3.2 ±2.2	4.5±3.6	0.458
Olyguria (N, %)	4, 7.0%	3, 14.3%	0, 0%	2, 6.3%	0.659
Proteinuria (g/24h)	4.9±2.8	4.2±2.7	4.0±2.6	3.8±2.3	0.088
Nephrotic syndrome (N, %)	21, 36.8%	9, 42.9%	1, 33.3%	7, 21.9%	0.385
Pathology Baseline					
Total Crescent (%)	68.3±15.3	64.2±20.4	63.3±6.4	64.4±13.5	0.830
Cellular crescent (%)	29.0±21.4	24.0±19.4	19.3±2.5	17.1±16.5	0.039
Fibrocellular crescent (%)	31.6±20.3	23.6±16.1	42.3±10.8	30.0±18.6	0.362
Fibrous crescent (%)	7.8±9.1	16.2±16.3	1.3±2.3	17.3±22.0	0.064
Cellular+ Fibrocellular＞50% (N, %)	41, 74.5%	10, 52.6%	3, 100%	12, 37.5%	0.004
Tubular atrophy/interstitial fibrosis					0.466
~50% (N, %)	22, 38.6%	7, 33.3%	0, 0	14, 43.8%	
>50% (N, %)	33, 57.9%	13, 61.9%	3, 10%	17, 53.1%	
Interstitial inflammation					0.857
~20% (N, %)	1, 1.6%	1, 4.8%	0, 0	0, 0	
20%~50% (N, %)	3, 5.3%	1, 4.8%	0, 0	3, 9.4%	
50%~ (N, %)	51, 89.5%	18, 85.7%	3, 100%	28, 87.5%	
Outcomes					
ESRD(1 Year after Renal Biopsy) (N, %)	20, 35.1%	12, 57.1%	2, 66.7%	14, 43.8%	0.277
ESRD(End of follow-up) (N, %)	29, 50.9%	13, 61.9%	3, 100%	18, 56.3%	0.354

a: Aggressive Immunosuppressive Therapy means the patient with high-dose steroid and cytotoxic agent

Supplemental Table 2:Factors that affected renal survival in patients with cellular/fibrocellular crescents > 50% of total glomeruli (n=66)

	Univariate analysis			Multivariate analysis		
	HR	95% CI	p	HR	95% CI	p
Female	0.752	0.373-1.518	0.427			
Age (years)	0.992	0.970-1.015	0.507			
Proteinuria (g/24hrs)	0.942	0.834-1.062	0.328			
Serum creatinine (mg/dl)	1.328	1.199-1.470	<0.001	1.308	1.153-1.485	<0.001
Serum albumin (g/L)	0.992	0.941-1.045	0.750			
Macrohematuria	0.451	0.187-1.090	0.077	0.850	0.346-2.092	0.724
Oliguria	0.784	0.240-2.566	0.687			
Mean blood pressure (mmHg)	1.022	1.006-1.039	0.006	0.997	0.980-1.015	0.758
Total crescent (%)	3.874	0.403-37.192	0. 241			
Global glomerulosclerosis (%)	128.997	10.885-1528.706	<0.001	2.330	0.132-41.106	0.564
Normal Glomeruli (%)	0.012	0.001-0.104	<0.001	1.536	0.105-22.531	0.754
Tubular atropy/interstitial fibrosis						
20%-50%	reference					
>50%	4.054	1.747-9.407	0.001	2.879	1.041-7.967	0.042
Interstitial inflammation			0.616			
0~20%	reference					
21%~50%	e^{11}	$0.000-e^{252}$	0.966			
>50%	e^{12}	$0.000-e^{253}$	0.969			
Treatment (Immunosuppressive therapy)						
With no immunosuppressive treatment as reference	0.592	0.243-1.441	0.248			
Steroids alone as reference	0.495	0.207-1.185	0.114			
CTX or CysA alone as reference	0.297	0.086-1.024	0.055			

Supplemental Table 3:Factors that affected renal survival in patients with cellular/fibrocellular crescents > 50% of total crescents (n=88)

	Univariate analysis			Multivariate analysis		
	HR	95% CI	p	HR	95% CI	p
Female	0.668	0.369-1.210	0.183			
Age (years)	0.993	0.975-1.012	0.455			
Proteinuria (g/24hrs)	1.005	0.915-1.103	0.923			
Serum creatinine (mg/dl)	1.351	1.232-1.482	<0.001	1.310	1.165-1.473	<0.001
Serum albumin (g/L)	0.972	0.932-1.013	0.181			
Macrohematuria	2.342	1.049-5.227	0.038	0.726	0.303-1.738	0.472
Oliguria	1.272	0.395-4.100	0.687			
Mean blood pressure (mmHg)	1.026	1.012-1.040	<0.001	0.999	0.981-1.016	0.867
Total crescent (%)	2.093	0.286-15.311	0. 467			
Tubular atropy/interstitial fibrosis						
20%-50%	reference					
>50%	4.109	1.975-8.550	<0.001	1.886	0.756-4.705	0.174
Interstitial inflammation			0.480			
0~20%	reference					
21%~50%	e^{11}	$0.000\text{-}2.58 \times e^{248}$	0.969			
>50%	e^{12}	$0.000\text{-}8.77 \times e^{248}$	0.966			