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A clinical significance of crescent formation in IgA nephropathy

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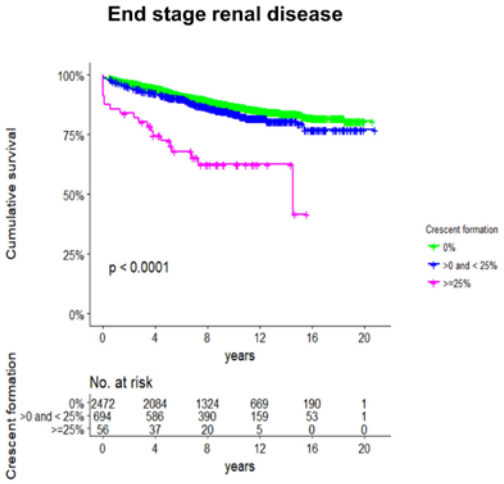
Objectives: Recent guideline updated the Oxford classification for pathologic findings of IgA nephropathy (IgAN), and clinical importance of crescent formation has been addressed. Still, additional validation of its significance is warranted.

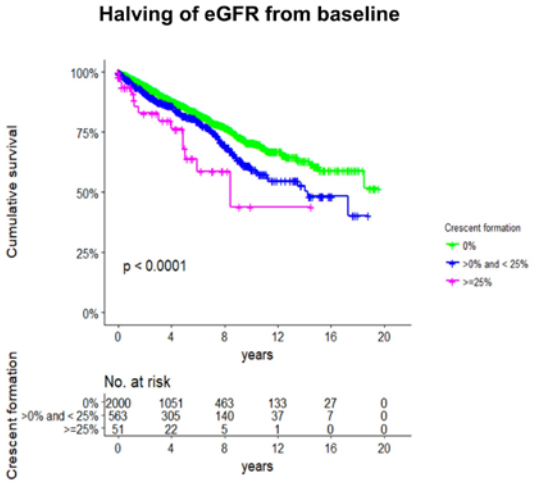
Methods: We conducted a multicenter retrospective cohort study. We collected information of IgAN patients in four tertiary referral hospitals, under the project by the Korean Glomerular Disease Study Group. The degree of crescent formation was stratified following the MEST-C scoring system (C0: 0%, C1: >0% and <25%, C2: ≥25%). Clinical outcomes were progression to end stage renal disease (ESRD) and halving of estimated glomerular filtration rate (eGFR) from the baseline value. Patients 1) who received kidney biopsy before electrical medical records were available, 2) without follow-up information, or 3) with number of biopsied glomeruli less than eight were excluded. Clinical outcomes were analyzed with the multivariable Cox regression analysis.

Results: We studied a total of 3,222 biopsy-confirmed IgAN patients in the study with a median follow-up duration of 8.6 years. There were 750 (23.3 %) patients with identified crescents in their kidney biopsy, and 56 (1.7 %) patients had a C2 score. Patients with crescentic IgAN were tended to be older of age (P<0.001) and had higher mean arterial pressure (P<0.001) and lower baseline eGFR (P<0.001). When we assessed the prognosis, C2 lesion was independently associated with higher risk of ESRD (adjusted HR 2.037, 95% CI 1.254-3.309, P=0.004). Moreover, both C1 (adjusted HR 1.441, 95% CI 1.169-1.775, P<0.001) and C2 (adjusted HR 2.001, 95% CI 1.159-3.457, P=0.013) lesions were associated with worse prognosis in regards of halving of eGFR from baseline.

Conclusions: Crescentic lesions in IgAN were confirmed to be associated with worse prognosis in a large cohort. Clinicians may consider close monitoring and develop appropriate clinical management for IgAN patients with crescent formation.

patient prognosis according to C scores


End stage renal disease
Cumulative survival
100%
75%
50%
25%
0%
p < 0.0001
0
4
8
12
16
20
years
Crescent formation
0%
>0 and < 25%
>=25%
No. at risk
0% 2472 2084 1324 669 190 1
>0 and < 25% 694 586 390 159 53 1
>=25% 56 37 20 5 0 0
0
4
8
12
16
20
years
Crescent formation
0%
>0 and < 25%
>=25%


Halving of eGFR from baseline
Cumulative survival
100%
75%
50%
25%
0%
p < 0.0001
0
4
8
12
16
20
years
Crescent formation
0%
>0% and < 25%
>=25%
No. at risk
0% 2000 1051 463 133 27 0
>0% and < 25% 563 305 140 37 7 0
>=25% 51 22 5 1 0 0
0
4
8
12
16
20
years
Crescent formation
0%
>0% and < 25%
>=25%