Mesangial IgG deposition and renal outcome in IgA Nephropathy: is there a connection?

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BACKGROUND

Immunoglobulin A nephropathy (IgAN) is characterized by mesangial deposits of IgA and C3, frequently with co-deposits of IgG. Since IgG deposits are not essential for IgAN diagnosis, their clinical significance was less examined. Therefore, we aimed to investigate whether IgG deposits are related to the renal outcome in IgAN.

METHODS

In this single-center historic cohort study we examined the renal outcome at December 31, 2014 of 84 patients (mean age 40.4 [37.6-43.1] years, 70% male, eGFR 51.22 [46.10-56.35] mL/min – CKD-EPI) who had biopsy proven IgAN between 2003 and 2013. Original renal biopsy from all patients were available and the following features were noted: immunofluorescence pattern (IgA staining – mesangial + capillary wall; IgG staining – more than trace was considered positive), Oxford classification. The primary endpoint was kidney survival defined as doubling of serum creatinine or end-stage renal disease (ESRD). Study patients were divided into two groups according to the presence of IgG deposition: IgA only (36 patients) and IgA&IgG (48 patients).

RESULTS

There were no differences at the time of diagnosis between the two groups regarding the known risk factors for disease progression: age, hypertension, eGFR, 24hP. However, the patients in the IgA&IgG group had lower Hb and a tendency to a lower-grade hematuria. We found no relationship between the two immunofluorescence patterns and the Oxford classification. Forty-two percent of the IgA&IgG group reached the composite endpoint compared to 19% in the IgA only group. The mean kidney survival of the entire cohort was 7.5 [6.6-8.5] years and there was no difference between the two groups. Furthermore, the lack of survival difference remained when only ESRD was considered the endpoint. By multivariate analysis, the presence of IgG deposits was not retained in the final model; hypertension, low eGFR and S1 were independent predictors of a decreased renal survival.

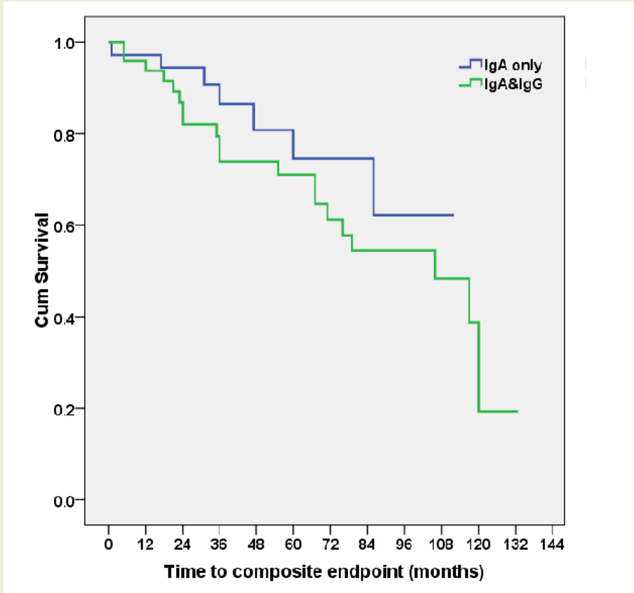
CONCLUSIONS

Mesangial IgG co-deposition with IgA was not associated with renal outcome in the studied cohort.

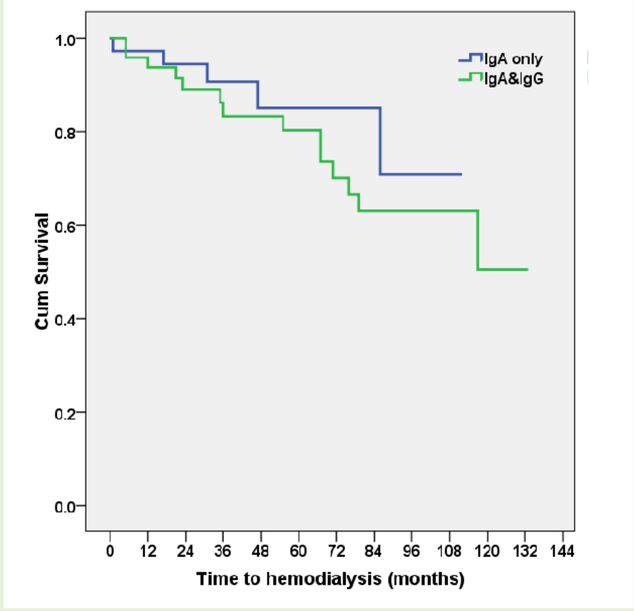
	All N=84	IgA N=36	IgA&IgG N=48	p
Age (years)	40.4 [37.6-43.1]	39.1 [35.4-42.8]	41.3 [37.2-45.4]	0.4
Male gender (%)	70	78	65	0.1
Hypertension (%)	51	44	56	0.2
Nephrotic syndrome (%)	20	17	23	0.4
Nephritic syndrome (%)	29	36	23	0.1
Hemoglobin (g/dL)	13.70 [13.20-14.40]	14.25 [13.50-15.40]	13.25 [12.40-14.00]	0.01
eGFR (mL/min)*	51.22 [46.10-56.35]	55.00 [47.10-62.90]	48.39 [41.52-55.26]	0.2
Proteinuria (g/24h)	2 [1.4-2.2]	2 [1.8-3.2]	1.5 [1-2.2]	0.1
Hematuria (h/mm^3)	105 [75-180]	170 [80-230]	90 [45-185]	0.09
Oxford classification (%)				
M1	64	67	63	0.6
E1	25	25	25	1
T1	81	78	83	0.5
S1	66	69	63	0.5
Endpoint (%)				
HD	23	14	29	0.09
Double creatinine	12	11	13	0.8
Composite endpoint	32	19	42	0.03

Kaplan Meier

IgA vs. IgA&IgG:
7.4 [6.3-8.6] years vs.
7.1 [5.9-8.3] years; p=0.2



IgA vs. IgA&IgG:
7.9 [6.9-9] years vs.
8.2 [7.1-9.4] years; p=0.4



Cox proportional hazard model

	HR (95%CI)	p
eGFR (mL/min)	0.96 [0.94-0.99]	0.01
Hypertension (yes vs. no)	3.23 [1.13-9.22]	0.02
S1 vs. S0	2.37 [0.85-6.59]	0.09

HR hazard ratio; 95%CI – confidence interval
Variables entered at first step: 24h proteinuria, hematuria, eGFR, hypertension, IgA&IgG, M1, S1, T1, E1

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