

EVOLUTION OF KIDNEY IMPACT IN SMALL VESSEL VASCULITIS: A COMPARISON BETWEEN IgA AND ANCA-ASSOCIATED VASCULITIS FROM A SINGLE REFERRAL CENTRE

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BACKGROUND

Immunoglobulin A (IgA) vasculitis (**IgAV**) and antineutrophil cytoplasmic antibody (ANCA)-associated vasculitis (**AAV**) are small vessel vasculitis. IgAV is characterized by IgA1-dominant immune complexes deposition at vessel walls (Type III hypersensitivity reaction). By contrast, AAV is mediated by ANCA (Type II hypersensitivity reaction). Therefore, immunological pathogenesis is very different. Renal involvement is a common and potentially severe manifestation in both diseases.

OBJETIVES

To compare a) **immunological analytical findings** and b) **renal outcome** in a series of patients with renal involvement due to IgAV and AAV.

METHODS

Observational study of patients with IgAV or AAV with kidney involvement from a single university hospital, from January 2021 to December 2023.

At the time of diagnosis, **serum immunological parameters** (IgA for IgAV, ANCA for AAV and C3 and C4 for both) were collected.

In addition, **data of renal involvement** (hematuria or proteinuria, renal insufficiency, nephritic or nephrotic syndrome), dialysis or transplant throughout the follow-up were recorded (Table).

We defined: hematuria: >2 red blood cells/field in urinary sediment; proteinuria >150 mg of protein in 24-hour urine; renal insufficiency: EGFR < 60 mL/min/1.73 m²; nephrotic syndrome: proteinuria > 3.5 g/24h/1.73 m² and nephritic syndrome: edema, oliguria, proteinuria, hematuria (with blood casts and/or dysmorphic red blood cells in the urinary sediment), decreased GFR and arterial hypertension. A comparative study between groups was performed using Chi-square and Mann-Whitney U tests for qualitative and quantitative variables, respectively. p<0.05 was considered statistically significant.

RESULTS

We studied **49 IgAV** (25 women/24 men); mean age 26±24.2 years (range 2-80 years) and **74 AAV** (42 women/32 men); mean age 61.8±15.2 years (range 24-87 years) with kidney involvement.

As expected, patients with **IgAV** are **younger**. Ten of 49 IgAV patients (20.4%) had elevated IgA levels at the time of diagnosis.

In **AAV group**, ANCA were tested in 50 from tested positive for myeloperoxidase (67.57%), 22 for proteinase 3 (29.73%) and 2 for both (2.7%). C3 and C4 levels were in range in patients from both groups.

There were **significant differences** in **renal failure** between the two groups of vasculitis patients (p<0.0001) (Figure). Furthermore, there was a **higher frequency of dialysis** requirement in the **ANCA vasculitis group** (p=0.038). Notable differences were found in the presentation of elevated erythrocyte sedimentation rate (ESR) between both groups (p<0.0001). Moreover, patients with kidney failure had an increased probability of having a high ESR (p<0.0001), but not in those who were on dialysis or transplant recipients (p=1).

No significant differences were found in the rest of the parameters studied.

CONCLUSION

Compared to IgAV patients, patients with AAV are more susceptible to kidney failure and dialysis requirement, but it does not seem that complement levels can be a biomarker to determine which patients will present more severe kidney involvement. More research is needed to determine which immunological parameters may be useful in predicting a worse renal prognosis for both groups.

Table. Demographic and kidney involvement features of IgA and ANCA-associated vasculitis group of patients

	IgAV n=49	AAV n=74	p
Sex (females), n (%)	25 (51)	42 (57)	0.58
Age (years), mean±SD	26±24.22	61.83±15.23	<0.0001
Analytical findings at diagnosis of nephropathy			
Elevated ESR	10 (20.40)	38 (48.72)	<0.0001
Low C3	0 (0)	0 (0)	0.577
Low C4	0 (0)	0 (0)	0.577
C3 levels, mean±SD	119.49±25.96	117.59±24.88	0.831
C4 levels, mean±SD	41±75.08	29.67±8.90	0.145
Kidney outcome n (%)			
Renal failure , n (%)	5 (10.20)	55 (74.32)	<0.0001
Dialysis , n (%)	3 (6.12)	15 (20.27)	0.038
Kidney transplant, n (%)	1 (2.04)	8 (10.81)	0.086

Figure. Differences in the frequency of renal failure between patients with IgA vasculitis (5/49) and ANCA-associated vasculitis (55/74) (p<0.0001).

