

C3 Glomerulopathy: Patterns of Injury and Response to Treatment

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Objective

To evaluate the clinicopathological features, complement abnormalities, treatment, and outcomes of patients with C3G.

Methods

A retrospective study. C3G was defined as dominant C3 staining on IF with minimal or no IG staining. Patients received low-dose prednisone with MMF, CYP, or ECZ and were followed for 12 months. Renal survival was assessed using Kaplan-Meier estimator.

Results

23 patients with C3G (18 C3GN, 5 DDD) were evaluated at a nephrology center. Nephrotic syndrome was the main clinical presentation, and membranoproliferative glomerulonephritis (65%) was the most frequent pattern of injury (Figure 1). No significant differences were observed in renal function and outcomes between treatment groups at 12-month follow-up. 18% had ESRD or died at the end of follow-up (Table 1).

Conclusion

Immunosuppressive treatments are similarly effective in improving renal function in our population. However, it's crucial to evaluate each C3G patient for complement abnormalities and triggering factors to recommend suitable treatment.

Table 1. Characteristics of C3 Glomerulopathy patients according to treatment group at 12 months follow up

		Treatment Group				P Value
		MMF (n=10)	CYP (n=8)	ECZ (n=5)	Total (n=23)	
Gender, n (%)	Age (Mean ± SD)	44,5 ± 19,3	43,4 ± 12,3	25,2 ± 10,1	39,9±16,8	0,06
	Male	6 (60)	4 (50)	2 (40)	12 (52)	0,86
	Female	4 (40)	4 (50)	3 (60)	11 (48)	
Renal Function	Blood Urea Nitrogen (mg/dL)	24,4 ± 16,7	37,7 ± 33,5	15,5 ± 5,8	30,1 ± 17,4	0,55
	Creatinine (mg/dL)	2,13 ± 2,1	3,2 ± 2,1	1,7 ± 1,9	2,42 ± 2,01	0,19
	Proteinuria (g/24 hours)	3,4 ± 1,2	4,4 ± 1,1	2,8 ± 2,3	2,1 ± 6,6	0,23
Complement, n	Low C3 <80 mg/dl	4	7	5	16	0,02*
	Low C4 <15 mg/dl	3	6	5	14	0,02*
Outcomes, n (%)	ESRD	1 (10)	3 (37)	1 (20)	5 (18)	0,46
	Death	1 (10)	2 (25)	0 (0)	3 (11)	0,57

MMF: Mofetil Mycophenolate; CYP: Cyclophosphamide, ECZ: Eculizumab. ESRD: End-Stage Renal Disease. *P < 0.05, Fisher exact test.

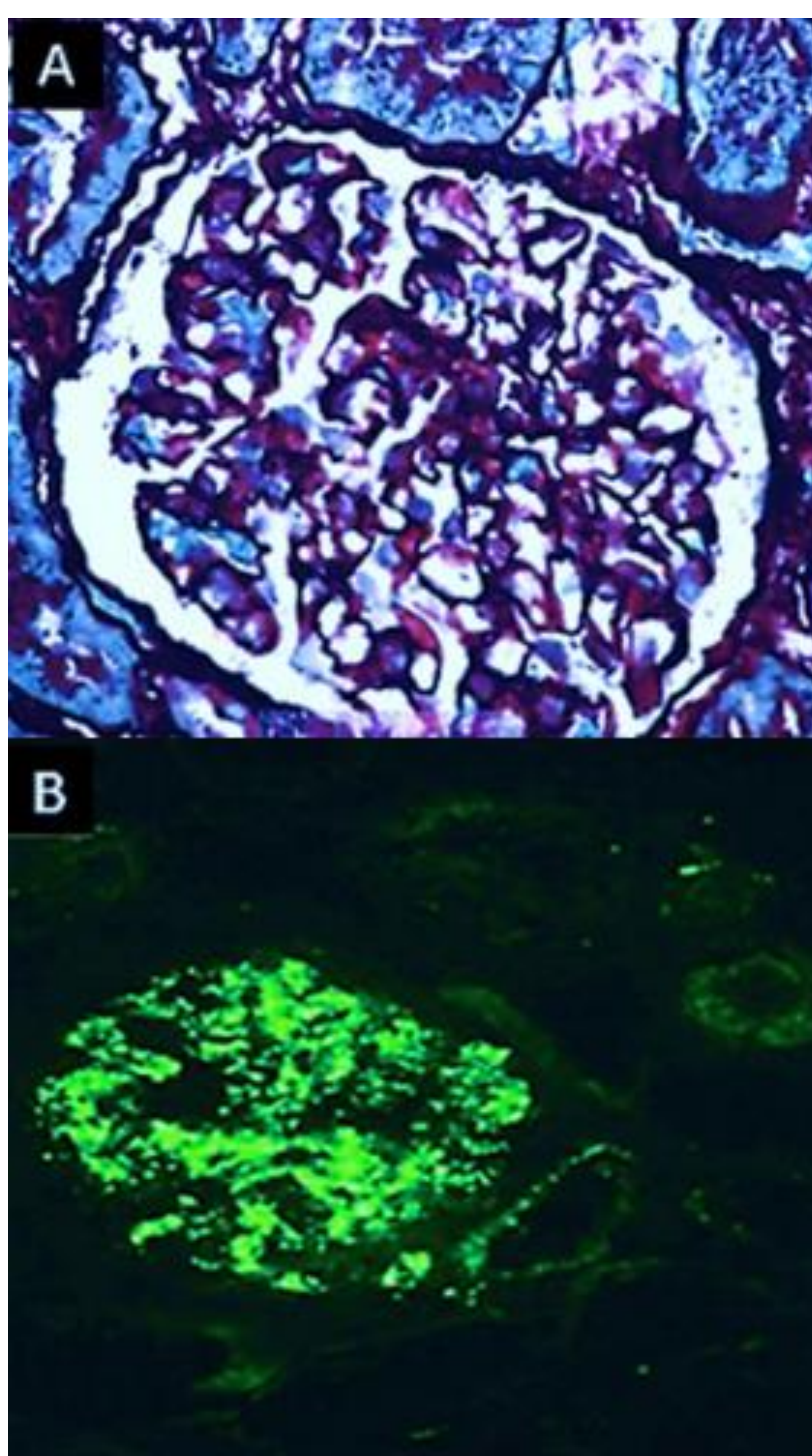
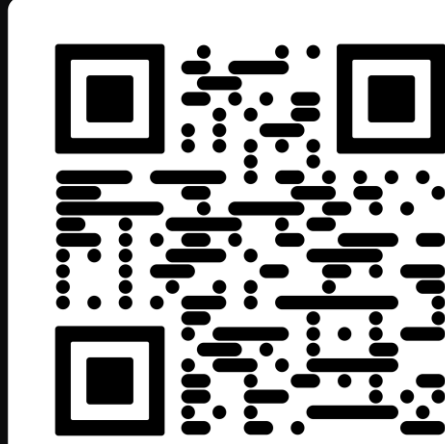


Figure 1: Most common Histopathological pattern in C3 Glomerulopathy
n = 23

(A) Membranoproliferative Glomerulonephritis (65%) – Silver Stain

(B) C3 Glomerulopathy (with anti-C3 antibody x400) Diffuse Granular Deposition



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