

COLLAPSING GLOMERULOPATHY - A BIOPSY REVIEW

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INTRODUCTION AND AIMS

Collapsing glomerulopathy (CG) is an aggressive morphologic variant of focal segmental glomerulosclerosis (FSGS), characterized by severe proteinuria, rapidly progressive renal failure and poor response to therapy¹.

This is a podocytopathy seen usually in association with human immunodeficiency virus (HIV), known as HIV-associated nephropathy (HIVAN), being relatively rare in non HIV infected patients, where pathogenesis is still unknown².

The aim of this study was to review the histological characteristics and clinical findings of all native renal biopsies received by our pathology department in the last 10 years with the diagnosis of CG.

POPULATION AND METHODS

Retrospective review of all biopsies with collapsing features received by the renal pathology department of our hospital in the last 10 years.

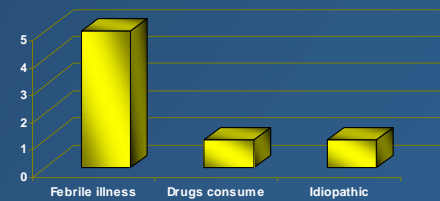
At least one glomerulus with segmental or global capillary collapse with wrinkling of basement membrane prominence and crowding of the epithelial cells was required for the diagnosis of CG.

Clinical data: age, gender, race, presence of HIV, hepatitis B virus (HBV) or hepatitis C virus (HCV) infection, presence of an acute febrile illness, dialysis requirement.

Laboratory data: serum creatinine (Scr) values, 24 hours proteinuria, and presence of hematuria.

RESULTS

In the last 10 years...



Renal biopsies were performed due to:



Biopsy characteristics

Population characteristics

	HIVAN (n=9)	Non HIVAN CG (n=7)	Total (n=16)
Male gender (%)	88.9%	71.4%	81.3%
Mean age (anos)	37.7±10	31.4±7.7	34.9±9.3
Black race (%)	77.8%	42.9%	66.7%
HBV infection (%)	0%	28.6%	12.5%
HCV infection (%)	22.2%	0%	12.5%
Dialysis requirement (%)	62.5%	60%	61.5%
Scr (mg/dl)	5.2±2.3	4.4±2.9	4.9±2.5
Proteinuria (g/24h)	5.2±5.8	8.4±3.6	6.3±5.2
Hematuria (%)	44.4%	42.9%	43.8%

	HIVAN (n=9)	Non HIVAN CG (n=7)	P
Mean glomeruli number	7.8±3.8	9±3.6	—
Mean collapsed gl number	3.5±3.2	3.1±1.9	—
Mesangial proliferation	0%	42.9%	0.003
Interstitial infiltrate			
Moderate	55.5%	71.4%	NS
Severe	44.5%	28.6%	
Interstitial fibrosis			
Moderate	11.1%	42.9%	NS
Severe	88.9%	57.1%	
Tubular atrophy			
Moderate	11.1%	42.9%	0.05
Severe	88.9%	57.1%	
Microcystic dilatation	66.7%	28.6%	NS
Immunofluorescence (n)			
C3	2	0	NS
C3 + C1q	1	0	NS
C3 + IgM	1	1	NS
IgM	1	0	NS
C3 + IgA	0	3	0.003

CONCLUSIONS

CG is a rare podocytopathy, affecting predominantly young males.

The disease is usually associated with acute febrile illness in non HIV infected patients, and we may suppose that infections, as HIV, could lead to podocyte injury.

References:

¹ Albuquimi M, Barisoni L. Current views on collapsing glomerulopathy. J Am Soc Nephrol 2008

² Meyrier AY. Collapsing glomerulopathy: expanding interest in a shrinking tuft. Am J Kidney Dis 1999; 33: 801-803