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Clnicopathological characteristics and outcome of crescentic glomerulonephritis: A single centre study

Manzoor Parry
Department of nephrology, Sher i kashmir institute of medical sciences, India

Objectives: The aim of this study is to identify the etiology and clinicopatholical features and outcomes of Crescentic glomerulonephritis (CrGN).

Methods: In this observational study 80 biopsy-proven CrGN were included. Patients' data regarding demographic profile, clinical parameters, treatments and outcomes were collected and analyzed.

Results: 5.7% biopsies were having CrGN. Mean age in our study population was 40.86 ± 16.5 years. Type II CrGN was most common type followed by type III and type I CrGN. Female predominance was observed in type I and type II CrGN, whereas type III was more predominant in males (table 1). The highest percentage of glomeruli with crescents was seen in type I (87 ± 15.2%, p=0.04) followed by type III (76.4 ± 21.4%) and type II (70.2 ± 18.1%).Hemodialysis was needed in more than half of the cases at the time of presentation and was significantly more common in type I (72.7%) and type II (57.6%) CrGN (p=0.0034). Nearly half of the cases (53.7%) received combination of steroid and cyclophosphamide, most commonly in type III (66.7%) followed by type I (45.5%) CrGN (p=0.0381). At the last follow-up, mean serum creatinine and eGFR were 3.86 ± 3.2 mg/dl and 25.8 ± 11.41 mL/min/1.73 m 2 respectively and was significantly lower in type I CrGN(6.7 ± 5.1 mg/dl and 11.6 ± 4.8 mL/min/1.73 m 2 respectively). The overall 5-y renal survival rate was 55% and was highest in type II (69.4%) followed by type III (48.5%) and lowest in type I (27.3%) CrGN(p=0.0299).

Conclusions: Type II CrGN was the most common type of CrGN followed by type III CrGN. Among type II CrGN, Lupus followed by IgA nephropathy were predominant causes.5 year renal survival was significantly less in type I compared to type II and type III CrGN.

Table 1. Baseline features of the study population

Characteristic	TOTAL (N 80)	TYPE 1 (N 11)	TYPE II (N 36)	TYPE III (N 33)	P VALUE
Age, mean ± SD	40.86 ± 16.5	38.4 ± 16.4	35.8 ± 14.8	47.2 ± 14.3	0.07
Gender (male:female ratio)	37:43	4:7	12:24	19:14	0.1113
Oliguria, n (%)	43 (53.7)	07 (63.6)	19 (52.8)	17 (51.5)	0.5125
Gross Hematuria, n (%)	04 (5.4)	2 (18.8)	1 (2.8)	1 (30.3)	0.09692
Rash, n (%)	15 (18.75)	1 (9.1)	14 (38.9)	4 (12.12)	0.015564
Arthralgia, n (%)	16 (20)	2 (18.8)	8 (22.2)	6 (18.2)	0.3364
Hypertension, n (%)	50 (62.5)	7 (63.6)	22 (61.1)	21 (63.6)	0.3762
Cough, n (%)	24 (30)	4 (36.4)	9 (25)	11 (33)	0.1949
Hemoptysis, n (%)	11 (13.7)	3 (27.3)	1 (2.7)	6 (18.2)	0.0432
Duration of symptoms, days; mean ± SD	28.8 ± 16.8	22.8 ± 16.2	34.6 ± 14.8	24.4 ± 15.4	0.011
Hemoglobin, g/d mean±SD	8.8 ± 2.1	7.8 ± 1.9	9.2 ± 2	8.8 ± 2.1	0.140
Total leucocyte (cells*109/L, mean±SD	9.17 ± 3.7	9.2 ± 3.8	9.6 ± 3.6	8.7 ± 3.2	0.562
Serum albumin (g/dL, mean±SD)	2.9 ± 0.7	3.1 ± 0.6	2.7± 0.7	3.2 ± 0.6	0.006
24-hour proteinuria (g/day, mean ± SD)	3.02 ± 1.6	2.6 ± 1.2	3.9 ± 2.1	2.2 ± 1.4	<0.0001
Serum creatinine (mg/dL, mean±SD)	5.87 ± 3.9	8.1± 4.6	4.9 ± 3.4	6.2 ± 3.9	0.046
CKD-EPI eGFR (ml/min/1.73m2, mean ± SD)	13.3 ± 8.3	6.7 ± 4.9	16.1 ± 8.6	12.4 ± 8.2	0.003
Serum complements					
Low C3	31/80	1/11	23/36	07/33	0.0001
Low C4	10/80	0	09/36	01/33	0.0132$
Serology (n/N (%))					
ANA Yes	25/80	2/11	18/36	5/33	0.00464
Anti- dsDNA Yes	16/80	0/11	16/36	0/33	<0.00001
ANCA Yes	37/80	2/11	6/36	29/33	<0.0001
Anti-MPO-ANCA Yes	23/80	1/11	4/36	18/33	0.0001
Anti-PR3-ANCA Yes	17/80	1/11	3/36	13/33	0.004
Anti-GBM	12/80	10/11	0/36	2/33	<0.0001£

@ class 1 and class 11 $ class II and class III £ class i and class III