* ***Table (1) :***

Sex distribution of the studied cases of glomerulonephritis (GN) according to ANCA :-

Sex	Females		Males		Total	
ANCA	No	%	No	%	No	%
Negative	15	51.7	12	57.2	27	54.0
Positive :-						
P (Perinuclear)	9	31.1	6	28.5	15	30.0
C (Cytoplasmic)	5	17.2	2	9.5	7	14.0
a (atypical)	0	0.0	1	4.8	1	2.0
Total	29	100.0	21	100.0	50	100.0

* ***This table shows :-***

- Among the 50 cases of GN , 29 cases (58 %) were females and the remaining 21 (42 %) were males.
- Among the 29 females cases , the ANCA was positive in 14 cases (48.2 %), 9 of them(64.2 %) were P - ANCA and 5 cases (35.8 %) were C-ANCA.
- Among the 21 male cases , the ANCA was positive in 9 cases (42.8 %), 6 of them (66.6 %), were P - ANCA , 2 cases were C - ANCA (22.3 %) , and one case (11.1 %) was a - ANCA .

* Table (2) :-

Distribution of the studied cases of glomerulonephritis according to the etiology and types of ANCA ..

Etiology	Primary		Secondary		Total	
ANCA	No	%	No	%	No	%
Negative	9	64.3	18	50.0	27	54.0
Positive :						
P	4	28.5	11	30.5	15	30.0
C	1	7.2	6	16.7	7	14.0
a	0	0.0	1	2.8	1	2.0
Total	14	100.0	36	100.0	50	100.0

* This table Shows :-

- Among the 50 cases of GN , the etiology was primary in 14 cases (28 %) and was secondary in the remaining 36 cases (72 %).

- Among the 14 cases with primary GN , 5 cases (35.7 %) were ANCA positive, 4 of them (80 %) were P - ANCA and one case (20 %) was C - ANCA.

- Among the 36 cases with secondary GN , 18 cases were ANCA positive (50%), 11 of them (61.2 %) were P - ANCA , 6 cases (33.3 %) were C - ANCA and one case (5.5 %) was a - ANCA.

* Table (3) :-

Distribution of cases of secondary GN according to their etiology and ANCA :-

ANCA	Negative		Positive						Total	
			P		C		a			
Etiology	No	%	No	%	No	%	No	%	No	%
SLE	7	70.0	3	30.0	0	0.0	0	0.0	10	100.0
W.G	1	16.6	0	0.0	5	83.4	0	0.0	6	100.0
PSGN	8	80.0	1	10.0	0	0.0	1	10.0	10	100.0
CSS	1	20.0	4	80.0	0	0.0	0	0.0	5	100.0
PAN	1	20.0	3	60.0	1	20.0	0	0.0	5	100.0
Total	18	50.0	11	30.6	6	16.7	1	2.8	36	100.0

* This table Shows :-

- Among the 36 cases of secondary GN , 10 cases (27.8 %) were caused by SLE.

- Among those 10 cases , 3 cases (30 %) were ANCA positive, and the type of ANCA was P - ANCA in all cases.

- Among the 36 cases of secondary GN, the etiology was W.G in 6 cases(16.6%).

- Among those 6 cases , 5 cases (83.3 %) were ANCA positive and the type of ANCA was C in the all 5 cases.

- Among the 36 cases of secondary GN, the etiology was PSGN in 10 cases (27.8%).

- Among those 10 cases, 2 cases were ANCA positive (20 %) and the type of ANCA was p-ANCA in one case and a - ANCA in the other.

- Among the 36 cases of secondary GN, 5 cases were caused by CSS (13.8 %). Among those 5 cases, 4 cases (80 %) were ANCA positive, and the type of ANCA was p-ANCA in all cases.

- Among the 36 cases of secondary GN, 5 cases (13.8 %) were caused by PAN.Among those 5 cases, 4 cases (80%) were ANCA positive and the type of ANCA was p-ANCA in 3 cases (75%) and c-ANCA in one case (25%).

* Table (4) :-

Distribution of the studied cases of G.N according to their types and pathology :-

Types of GN	Primary		Secondary		Total	
Pathological types	No	%	No	%	No	%
- Proliferative GN :-						
crescentic proliferative.	5	35.8	7	19.4	12	24.0
endothelial proliferative	1	7.1	4	11.2	5	10.0
mesangial proliferative	1	7.1	2	5.6	3	6.0
- Mesangiocapillary GN	2	14.3	7	19.4	9	18.0
- Membranous GN	2	14.3	6	16.6	8	16.0
- Focal segmental glomerulosclerosis	2	14.3	5	13.9	7	14.0
- Ischemic GN.	1	7.1	5	13.9	6	12.0
Total	14	100.0	36	100.0	50	100.0

* This table Shows :-

- Among the 50 cases of GN , the histopathological type was crescentic proliferative in 12 cases (24 %). Among those 12 cases, 5 cases (41.7 %) were primary GN and 7 cases (58.3 %) were secondary GN.

- Among the 50 cases of GN, the endothelial proliferative type was presented in 5 cases (10 %). Among those 5 cases 1 case (20 %) was primary and 4 cases (80 %) were secondary .

- Among the 50 cases of GN , the mesangial proliferative type was showed in 3 cases (6 %) , one of them (33.3) was primary and the other 2 were secondary (66.7).

- Among the studied 50 cases, the histopatohological type was mesangiocapillary in 9 cases (18 %), 7 of them were secondary (77.7%) and 2 cases were primary (22.3%).

- Among the 50 cases of GN, the membranous type was presented in 8 cases (16%),6 of them (75 %) were secondary and 2 case were primary(25 %).

- Among the 50 cases of GN , the focal segmental glomerulosclerosis was presented in 7 cases (14 %), 5 of them (71.4 %) were secondary and 2 were primary (28.6 %).

- Ischemic type was showed in 6 of the 50 studied cases (12 %) , 5 of them were secondary GN (83.3) , and 1 case was primary (16.7 %).

* Table (5) :-

Clinical presentation of the studied cases of GN according to types of ANCA:-

ANCA	Negative (n=27)		Positive						Total (n=50)	
			P (n=15)		C (n=7)		a (n=1)			
Clinical presentation	No	%	No	%	No	%	No	%	No	%
A symptomatic	8	80.0	2	20.0	0	0.0	0	0.0	10	100.0
Hypertention	5	71.4	1	14.3	1	14.3	0	0.0	7	100.0
Nephritic syndrome	2	33.4	3	50.0	1	16.6	0	0.0	6	100.0
Chronic renal failure(C.R.F.)	3	37.5	2	25.0	2	25.0	1	12.5	8	100.0
Hematuria	4	66.6	2	33.4	0	0.0	0	0.0	6	100.0
Rapid progressiveGN(RPGN)	1	16.7	3	50.0	2	33.3	0	0.0	6	100.0
Nephrotic syndrome	4	57.2	2	28.5	1	14.3	0	0.0	7	100.0

* This table Shows :-

Among the 50 cases of GN :-

- 10 cases (20 %) were presented with a symptomatic presentation and among those 10 cases , 2 cases (20 %) were ANCA positive. The ANCA type was P in both cases.

- 7 cases (14 %) were presented with hypertention, 2 of them (28.5 %) were ANCA positive. The type of ANCA was P in one case (50 %) and C in the other case (50 %).

- 6 cases (12 %) were presented with manifestation of nephritic syndrome. Among those 6 cases , 4 cases (66.7 %) were ANCA positive. 3 of them (75 %) were P - ANCA and one case (25 %) was C - ANCA.

- 8 cases (16 %) were presented with manifestation of chronic renal failure. Among those 8 cases , 5 cases (62.5 %) were ANCA positive. The type of ANCA was P - ANCA in 2 cases (40 %), c - ANCA in 2 cases (40 %) and a - ANCA in one case (20 %).

- 6 cases (12 %) were presented with hematuria, 2 of them were ANCA positive (33.3 %) and the type of ANCA was p - ANCA in both cases.

- Manifestations of rapid progressive GN were showed in 6 cases (12 %). Among those 6 cases, 5 cases were ANCA positive (83.3 %), 3 of them (60 %) were P - ANCA and 2 cases were C - ANCA (40 %).

- 7 cases were presented with manifestation of nephrotic syndrome (14 %). Among those 7 cases , 3 cases were ANCA positive (42.8 %) , 2 of them were P - ANCA (66.6%) and one case was C - ANCA (33.4 %).

* Table (6) :-

Severity of cases of GN according to the result of lab and ANCA :-

ANCA	Negative		Positive		Total		X_2	P
Severity (Lab)	No	%	No	%	No	%		
S. creatinine < 1.5 mg / dl	24	88.9	9	39.1	33	66.0	13.704	< 0.01
S. creatinine > 1.5 mg / dl	3	11.1	14	60.9	17	34.0		
Proteinuria < 3 gm / 24 hr.	25	92.6	9	39.1	34	68.0	16.314	< 0.01
proteinuria > 3 gm / 24 hr.	2	7.4	14	60.9	16	32.0		
Hematuria and casts (absent)	20	74.1	8	34.8	28	56.0	7.782	< 0.05
Hematuria and casts(present)	7	25.9	15	65.2	22	44.0		

* The table Shows :-

- Among the 50 studied cases of GN , 17 of them (34 %) were have serum creatinine > 1.5 mg / dl whereas in the remaining 33 (66 %) , the serum creatinine was < 1.5 mg / dl.

- Among the 17 cases who had serum creatinine > 1.5 mg / dl, 14 of them were ANCA positive (82.4 %) while 3 cases (17.6 %) were ANCA negative .

- Among the 33 cases who had serum creatinine < 1.5 mg / dl, 24 (72.8 %) were ANCA negative whereas 9 cases (27.2 %) were ANCA positive. The difference was proven to be statistically significant.

- Among the 50 cases with GN , 16 cases were have proteinuria > 3 gm/ 24 hr (32%) whereas 34 cases were have proteinuria < 3 gm / 24 hr. (68 %).

Among the 16 cases who had proteinuria > 3 gm / 24 hr, 14 cases (87.5%) were ANCA positive.

- Among the 34 cases with proteinuria < 3 gm / 24 hr, the ANCA was positive in 9 cases (26.5 %). The difference was proven to be statistically significant.

- Among the 50 cases with GN, hematuria and casts were presented in 22 cases (44 %) and was absent in the remaing 28 cases (56 %).

- Among the 22 cases who had hematuria and casts, the ANCA was positive in 15 cases (68.2%) and among the 28 cases with no hematuria and casts, the ANCA was positive in 8 cases (28.5 %). The difference was proven to be statisti cally significant.

* Table (7) :-

Distribution of the cases of GN with positive ANCA according to severity (Lab).

Positive ANCA	P		C		a		Total	
Severity (lab).	No	%	No	%	No	%	No	%
S.creatinine < 1.5 mg / dl	6	40.0	3	42.8	0	0.0	9	39.1
S.creatinine > 1.5 mg / dl	9	60.0	4	57.2	1	100.0	14	60.9
Proteinuria < 3 gm / 24 hr	6	40.0	3	42.8	0	0.0	9	39.1
Proteinuria > 3 gm / 24 hr	9	60.0	4	57.2	1	100.0	14	60.9
Hematuria and casts (absent).	6	40.0	2	28.5	0	0.0	8	34.7
Hematuria and casts (present).	9	60.0	5	71.5	1	100.0	15	65.3

* The table shows :-

- Among the 14 ANCA positive patients who had s.creatinine > 1.5 mg / dl, 9 patients have P - ANCA (64.3 %) , 4 patients have C - ANCA (28.5 %) and one patient have a - ANCA (7.2 %)and among the 9 ANCA positive patients who had s.creatinine < 1.5 mg / dl , 6 patients have P - ANCA (66.7%) and 3 patients have C - ANCA (33.3 %).

- Among the 14 ANCA positive patients who had proteinuria > 3 gm / 24 hr., 9 patients have P - ANCA (64.3 %), 4 patients have C - ANCA (28.5 %) and one patient have a - ANCA (7.2 %).

- Among the 15 ANCA positive patients who had hematuria and cast, 9 patients (60 %) have P - ANCA , 5 patients (33.3 %) have C - ANCA and one patient have a - ANCA (6.7 %).

* Table (8) :-

Distribution of the cases of GN according to severity(clinical) and ANCA..

ANCA	Negative (n=27)		Positive (n=23)		Total (n= 50)	
Severity (clinical)	No	%	No	%	No	%
- Hemodialysis :-						
Absent	25	92.6	15	65.2	40	80.0
Present	2	7.4	8	34.8	10	20.0
- Severity of hypertention :-						
Mild (D.B.P. 90-95 mm/Hg)and Moderate (D.B.P:95-105 mm//Hg)	21	77.8	8	34.8	29	58.0
. Severe (D.B.P > 105 mm/Hg)	6	22.2	15	65.2	21	42.0

* The table shows :-

- Among the 50 cases of GN , 10 of them (20 %) had performed hemodialysis whereas the remaining 40 cases (80 %) did not need hemodialysis.

- Among those 10 case who had perforfmed hemodialysis, 8 of them (80 %) were ANCA positive whereas 2 (20 %) were ANCA negative. The difference was statistically significant.

- Among the 50 case of GN, 21 of them (42 %) were showed severe hypertention, 15 (71.5 %) of those 21 cases were ANCA positive wherease 6 of them (28.5 %) were ANCA negative. The difference was proven to be statistically significant.

**** Table (9) :-***

Distribution of the cases of GN with positive ANCA according to severity (clinical) :-

Positive ANCA	P		C		a		Total	
Severity (clinical).	No	%	No	%	No	%	No	%
- Hemodialysis :-								
Absent	10	66.6	5	71.5	0	0.0	15	65.3
Present	5	33.4	2	28.5	1	100.0	8	34.7
- Severity of hypertention								
Mild (D.B.P : 90-95 mm/Hg)and Moderate (D.B.P :95-105 mm/Hg)	6	40.0	2	28.5	0	0.0	8	34.7
. Severe (D.B.P > 105)	9	60.0	5	71.5	1	100.0	15	65.3

**** The table shows :-***

Among the 8 ANCA positive patients who had performed hemodialysis, 5 patients have P - ANCA (62.5 %) , 2 patients have C - ANCA (25 %) and one patient have a - ANCA (12.5 %).

Among the 15 ANCA positive patients who were showed severe hypertention, 9 patients have P - ANCA (60 %) , 5 patients (33.4 %) have C - ANCA and one patient (6.6 %) have a - ANCA.

*** Table (10) :-**

Distribution of the cases with GN secondary to collagen disease and vasculitis according to the remission and relapse and ANCA.

ANCA	Positive		Negative		Total	
Prognosis	No	%	No	%	No	%
Remission	6	40.0	9	60.0	15	100.0
Relapse	10	90.9	1	9.1	11	100.0
Total	16	61.5	10	38.5	26	100.0
Z	2.636		2.636			
P	< 0.05		< 0.05			

*** The table shows :-**

Among the 26 cases with glomerulopathy secondary to collagen disease and vasculitis , 16 cases (61.5 %) were ANCA positive whereas 10 cases (38.5%) were ANCA negative.

Among the 16 ANCA positive patients , 10 cases (62.5 %) were in state of relapse while 6 cases (37.5 %) were in state of remission. The difference was proven to be statistically significant.

Among the 10 ANCA negative patients, 9 cases were in state of remission (90 %) whereas 1 case was in state of relapse (10 %). The difference was proven to be significant.

* Table (11) :-

Distribution of the cases with GN secondary to collagen disease and vasculitis according to the type of remission.

ANCA	Positive		Negative		Total	
Remission	No	%	No	%	No	%
Spontaneous	1	20.0	4	80.0	5	100.0
With treatment	5	50.0	5	50.0	10	100.0
Total	6	40.0	9	60.0	15	100.0

* The Table shows :-

Among the 6 ANCA positive patients (who were in state of remission), the remission was induced by treatment in 5 cases (83.4 %) while it was spontaneous in one case (16.6 %).

Among the 9 ANCA negative patients, (who were in state of remission) the remission was induced by treatment in 5 cases (55.5 %) while it was spontaneous in 4 cases (44.5 %).

* Table (12) :-

Distribution of the cases with GN secondary to collagen disease and vasculitis according to their etiology, remission and relapse and ANCA.

ANCA	Positive		Negative		Total	
Prognosis	No	%	No	%	No	%
Remission :-						
SLE	1	14.3	6	85.7	7	100.0
W.G	1	50.0	1	50.0	2	100.0
CSS	2	66.7	1	33.3	3	100.0
PAN	2	66.7	1	33.3	3	100.0
Relapse :-						
SLE	2	66.7	1	33.3	3	100.0
W.G	4	100.0	0	0.0	4	100.0
CSS	2	100.0	0	0.0	2	100.0
PAN	2	100.0	0	0.0	2	100.0
Total	16		10		26	100.0

* This table shows :-

Among the 3 ANCA positive cases of SLE , one case (33.3 %) was in state of remission wheras 2 cases (66.7 %) were in state of relapse and among the 7 negative cases of SLE , 6 cases (85.7 %) were in state of remission whereas one cases (14.3 %) was in state of relapse.

- Among the 5 ANCA positive cases of W.G , 4 cases were in state of relapse (80%) and 1 cases (20 %) was in state of remission .

  One case with W.G was ANCA negative. It was in state of remission.

- Among the 4 ANCA positive cases with CSS , 2 of them (50 %) were in state of remission and 2 (50 %) were in state of relapse. One case with CSS were ANCA negative. It was in state of remission.

- Among the 4 ANCA positive cases with PAN , 2 of them (50 %) were in state of remission and 2 (50 %) were in state of relapse. On case with PAN was ANCA negative . It was in state of remission.

**** Table (13) :-***

Correlation coefficients (r) and probabilitiy value between ANCA and other variables.

Variables	ANCA	
	r	P
Hematuria :	0.4019	< 0.05
Hypertention :	0.4369	< 0.05
Dialysis :	0.3526	< 0.05
Proteinuria :	0.5270	< 0.05
S.creatinine :	0.3762	< 0.05

This table clearly shows a significant and positive relationship between ANCA and the following varibles : Haemtaturia , severe hypertention, (D.B.P.> 105 mm/Hg) dialysis, proteinuria and serum creatinine ($P < 0.05$).