

RESULTS

The results of the study were tabulated and statistically analysed.

There were 4 groups of patients, each group consisted of 20 candidates:

Group I: patients with nephrotic syndrome on their first presentation before institution of therapy

Group II: patients with nephrotic syndrome in remission.

Group III: patients with nephrotic syndrome in relapse and before reinstitution of therapy.

Group IV: healthy children matching the same age and sex as a control group.

I. Analysis of clinical and personal data

- (1) There were no statistical significant difference between the four groups as regards their ages (5.66 ± 3.01 , 6.67 ± 3.43 , 5.65 ± 3.81 and 3.99 ± 2.22 respectively) ($F=2.45$) (Table XII).
- (2) Table XIII shows the sex distribution of the children. It revealed no difference between any of the groups.
- (3) As regards the weight percentile represented as a % from the 50th centile for age and sex, groups I and III were significantly higher than group II and the control group (126.48 ± 18.14 , 93.98 ± 6.28 , 125.66 ± 31.75 and 92.64 ± 6.11 respectively) ($F=20.255$) (table XIV).
- (4) The height centile presented as a % from the 50th centile for age and sex showed no statistical differences between the four groups (111.8 ± 19.01 , 118.3 ± 20.58 , 111.1 ± 23.89 and 101.2 ± 14.73 respectively) ($F=2.5$) (table XV).
- (5) The mean systolic blood pressure in the first three groups was significantly higher than the control group (120.5 ± 12.76 ,

125±13.18, 121±16.83 and 92.5 ±5.5 mm Hg respectively) (F=27.5) (table XVI).

- (6) As regards the mean diastolic blood pressure, again all the patients groups had significantly higher values than those of the control (72.5±7.16, 76±7.54, 73.75±12.86 and 60.5±2.24 mm Hg respectively) (F=13.8) (table XVII).

II. Analysis of the laboratory data

- (1) The mean urine volume per kilogram per day voided by the four groups/day showed significant statistical differences between groups I and III and both the remission and control groups (35.83 ± 27.05, 60.48±35.81, 31.02±3.29 and 60.26±4.40 ml respectively) (F=9.625) (table XVIII).
- (2) The study of serum protein level among the four groups showed that groups I, II and III were significantly lower than the control group. Furthermore, group III was statistically significantly lower than group I and group II (5.98±0.9, 6.09±1.1, 4.48±1.2 and 7.7±0.36 g/dl respectively) (F=36) (table XIX).
- (3) The mean serum cholesterol level among the four groups showed that groups I, II and III were statistically significantly higher than the control group (401±137, 350±128, 402±105 and 168±15 mg/dl respectively) (F=20.0) (table XX).
- (4) The study of the blood urea among the 4 groups showed no statistical differences among them (34.1±10, 29.9±8, 32.4± and 25.9±4 mg/dl respectively) (F=2.6) (table XXI).
- (5) The study of serum creatinine level among the 4 groups showed that groups I and III were significantly higher than the

control group (0.9 ± 0.2 , 0.8 ± 0.1 , 0.8 ± 0.2 and 0.6 ± 0.1 mg/dl respectively) ($F=5.66$) (table XXII).

- (6) The mean number of WBCs count/mm³ among the four groups showed that groups II and III were significantly higher than the control group, while group III was significantly higher than group I (8.8 ± 1.5 , 10 ± 2.6 , 11.4 ± 3.8 and 7.7 ± 1.18 thousand/mm³ respectively) ($F=7.58$) (table XXIII).
- (7) The mean hemoglobin level among the 4 groups showed that group III was significantly higher than group I (10.4 ± 1.5 , 11.76 ± 1.2 , 12.2 ± 2.2 and 11.04 ± 1.6 respectively) ($F=4.3586$) (table XXIV).
- (8) The mean number of platelets among the four groups showed that the number platelets was statistically significantly higher in group III compared to group I (349 ± 103 , 369 ± 105 , 420 ± 714 and 314 ± 662 thousands/mm³ respectively) (table XXV).
- (9) The mean number of white blood cells/HPF in urine showed that their number is significantly high in groups I and III compared to the control group, while the mean number of pus cells/HPF in group II was significantly lower than group I (17.4 ± 22 , 3.45 ± 1.99 , 12.3 ± 13.1 and 1.36 ± 0.49 respectively) ($F=4.3586$) (table XXVI).
- (10) The study of serum interleukin-1 β concentrations among the 4 studied groups showed that IL-1 β is significantly higher in group I compared to controls and group II. Group II was found to be significantly higher than the control group, while group III was significantly higher than group II and the control group (1205 ± 1977 , 73 ± 91 , 687 ± 790 and 5.9 ± 2.7 pg/ml respectively) (table XXVII, Fig. 1).

- (11) The study of serum interleukin-6 concentration among the 4 studied groups showed that group I is statistically higher than group II, III and controls, while group III was statistically significantly higher than group II and control group. Group II was also found to be significantly higher than the control group. (448 ± 268 , 31.9 ± 40.6 , 171.2 ± 182 and 4.05 ± 2.1 pg/ml respectively) (table XXVIII) (Fig. 2).
- (12) The study of serum tumor necrosis factor level among the 4 groups showed that groups I, II and III were statistically significantly higher than the control group, while group I was significantly higher than groups II and III. Group III was significantly higher than group II (56.6 ± 9 , 29.2 ± 58 , 43.8 ± 24 and 5.5 ± 2.8 pg/ml respectively) (table XXIX, Fig. 3).
- (13) The study of urinary β -2 microglobulin among the 4 groups showed that groups I and III are significantly higher than the control group and the remission group (6.02 ± 5 , 2.48 ± 4.8 , 4.9 ± 7.6 and 1.3 ± 0.9 μ g/dl respectively) (table XXX, Fig. 4).

III. Correlation studies

The IL-1 β , IL-6, TNF and β -2 microglobulin correlations were studied as regards their correlation to all clinical and laboratory parameters

- (1) Interleukin-1 β selected positively group I (100%) and group III (100%) while it selected negatively all controls (100%). As regards group II they selected 60% positive and 40% negative cases ($X^2_4 = 58.9$) (table XXXI).
- (2) Interleukin-6 selected exactly the same as IL-1 β ($X^2_4 = 59.65$) (table XXXI).

- (3) Serum TNF behaved exactly the same as IL-1 β and IL-6 as regards groups I, III and controls, while in group II they selected 60% of negative cases and 40% of positive cases ($X^2_4 = 60$) (table XXXI).
- (4) Urinary β -2 microglobulin concentration selected negatively 100% of controls, while it selected negatively 65% of group I, 85% of group II, and 45% of group III but still significant ($X^2_4 = 17.76$) (table XXXI).

IV. Multiple regression analysis study

- (1) The multiple regression analysis study for predicting relapses from remission group showed that only the TNF is the significant parameter (table XXXII).
- (2) The multiple regression analysis study for predicting remission compared to the control group showed that IL-1 β and IL-6 were the only parameters that predict remission (table XXXIII).
- (3) The multiple regression analysis study for predicting remission from first presentation showed that systolic blood pressure, hemoglobin level and TNF to be the predicting factors (table XXXIV).

Table (XII): Age distribution of nephrotic patients and their controls (years)

No	First presentation	Remission	Relapse	Control
1	2.5	14	2	5
2	1.4	7	8	6
3	4	8	6	3
4	10	6	2	2
5	8	11	7	4
6	2	3.5	4	4.5
7	8	4.5	3	2
8	2	6	12	2
9	2.8	10	2.5	3
10	6	5	3	8
11	3.5	4	11	10
12	10	13	12	5
13	8	11	4.5	4
14	5	7	3	4
15	4	2	11	3
16	7	4	2	2
17	9	3.5	4.5	1.8
18	11	6	11	1.5
19	5	4	2.5	3
20	4	4	1.5	6
Mean \pm SD	5.66 \pm 3.01	6.67 \pm 3.43	5.65 \pm 3.81	3.99 \pm 2.22

F = 2.4543, not significant at 0.05 level

Table (XIII): Distribution of nephrotic patients and their control by sex

No	First presentation	Remission	Relapse	Control
1	Male	Female	Female	Female
2	Female	Female	Male	Male
3	Male	Male	Male	Female
4	Female	Male	Male	Female
5	Female	Female	Male	Male
6	Male	Male	Male	Male
7	Male	Female	Male	Female
8	Male	Female	Male	Male
9	Male	Male	Female	Female
10	Female	Female	Male	Female
11	Female	Male	Male	Female
12	Male	Male	Male	Female
13	Female	Male	Male	Male
14	Female	Male	Male	Male
15	Female	Female	Female	Female
16	Male	Female	Male	Female
17	Male	Male	Female	Female
18	Female	Male	Male	Female
19	Male	Female	Female	Male
20	Male	Male	Female	Male
Male	11 (55 %)	11 (55 %)	14 (70%)	8 (40%)
Female	9 (45 %)	9 (45 %)	6 (30%)	12 (60%)

Table (XIV): Distribution of nephrotic patients and their controls by weight percentile*

No	First presentation	Remission	Relapse	Control
1	133.136	87.5	186.44	90.6
2	135.66	96.15	146.24	91.83
3	119.83	98.8	135.33	99.3
4	119.81	82.16	194.50	84.74
5	120.77	89.3	148.80	95.86
6	129.66	95.66	113.05	101.75
7	118.57	95.18	116.28	93.22
8	121.55	97.33	85.48	97.24
9	123.12	98.6	153.50	92.20
10	117.82	96.26	116.27	96.61
11	132.714	95.86	169.97	92.16
12	120.86	100.11	95.53	79.27
13	120.77	96.31	118.71	89.87
14	118.91	96.28	109.44	83.88
15	119.05	101.7	81.20	92.20
16	122.54	93.98	105.35	93.22
17	120.86	76.53	118.97	88.98
18	116.37	91.83	96.32	91.24
19	117.83	100.25	115.12	92.34
20	119.83	89.87	106.60	106.33
Mean \pm SD	126.48 \pm 18.14 [@]	93.98 \pm 6.28	125.66 \pm 31.75 ^{^@}	92.64 \pm 6.11

F = 20.255*, significant at 0.05 level.

@ Significant from remission group

^ Significant from Control group

*Presented as a % from the 50th centile for age and sex

Table (XV): Distribution of nephrotic patients and their controls
by height percentile*

No	First presentation	Remission	Relapse	Control
1	90.4	160	86.8	108.4
2	84	120.6	127	116.1
3	102.9	127	116.1	94.1
4	138.3	116.1	86.8	86.8
5	126.4	144.8	121.7	102.9
6	86.8	99.1	106.6	106.6
7	127	105	94.9	86.8
8	86.8	114.6	149.7	86.8
9	94.9	137.5	90	94.1
10	114.6	108.4	94.9	126.4
11	97.9	102.9	143.3	138.3
12	137.5	156.5	149.7	108.4
13	126.4	143.3	106.6	102.9
14	108.4	121.7	94.9	102.9
15	101.6	86.8	144.8	94.1
16	121.7	101.6	86.8	86.8
17	132.2	99.1	105	86.8
18	144.8	116.1	143.3	84.0
19	109.9	101.6	90	94.9
20	102.9	102.9	84	116.1
Mean \pm SD	111.8 \pm 19.01	118.3 \pm 20.58	111.1 \pm 23.89	101.2 \pm 14.73

F = 2.5238, significant at 0.05 level

*Presented as a % from the 50th centile for age and sex

Table (XVI): Distribution of nephrotic patients and their controls by systolic blood pressure (mm Hg)

No	First presentation	Remission	Relapse	Control
1	110	140	110	90
2	110	110	130	90
3	130	120	110	90
4	100	130	120	90
5	110	110	130	90
6	120	130	110	90
7	120	120	120	100
8	130	130	110	90
9	130	140	130	90
10	120	120	140	100
11	140	100	140	110
12	150	150	140	90
13	130	140	140	90
14	120	130	120	90
15	120	140	140	90
16	130	120	130	90
17	120	110	110	90
18	110	120	120	90
19	110	130	80	90
20	100	110	90	100
Mean \pm SD	120.5 \pm 12.76 [^]	125 \pm 13.18 [^]	121 \pm 16.83 [^]	92.5 \pm 5.5

F = 27.5795*, significant at 0.05 level.

[^] Significant from Control group

Table (XVII): Distribution of nephrotic patients and their controls by diastolic blood pressure (mm Hg)

No	First presentation	Remission	Relapse	Control
1	70	70	70	60
2	70	80	60	60
3	70	70	80	60
4	60	80	70	60
5	80	70	60	60
6	80	70	70	60
7	80	80	80	60
8	80	80	80	60
9	70	80	80	60
10	80	70	90	60
11	70	60	60	70
12	80	90	80	60
13	70	80	100	60
14	70	80	60	60
15	60	70	90	60
16	80	70	80	60
17	80	80	70	60
18	70	80	85	60
19	70	90	50	60
20	60	70	60	60
Mean \pm SD	72.5 \pm 7.16 [^]	76 \pm 7.54 [^]	73.75 \pm 12.86 [^]	60.5 \pm 2.24

F = 13.8466*, significant at 0.05 level.

[^] Significant from Control group

Table (XVIII): Distribution of nephrotic patients and their controls by urinary volume in ml/kg/day

No	First presentation	Remission	Relapse	Control
1	9.09	35.71	31.81	59.37
2	35.14	46.88	29.72	57.89
3	14.29	53.57	28.57	60.71
4	20.83	75	31.25	65
5	20.59	37.14	29.41	56.25
6	15	64.86	32.5	61.11
7	16.47	42.31	35.29	68.19
8	41.18	40	32.35	66.66
9	15	23.96	27.5	63.07
10	22.35	28.13	29.41	54.16
11	66.67	75	25	50
12	23.68	25.37	28.94	60.71
13	23.81	25.93	33.33	62
14	125	34.38	31.15	57.14
15	20	77.78	26.66	60
16	40	60	38.46	63.63
17	65	133.33	30	61.9
18	41.18	111.54	29.41	60
19	46.67	150	33.33	62.96
20	54.55	68.75	36.36	54.54
Mean \pm SD	35.83 \pm 27.05 ^{^@}	60.48 \pm 35.81	31.02 \pm 3.29 ^{^@}	60.26 \pm 4.40

F = 9.625, significant, $p < 0.05$ level.

[^] Significant from Control group

[@] Significant from remission group

Table (XIX): Distribution of nephrotic patients and their controls by serum protein level (g/dl)

No	First presentation	Remission	Relapse	Control
1	5.5	6.9	3	7.4
2	6.2	3.4	6	7.2
3	6.4	6.5	3.80	7
4	4.8	6.4	5.70	8.2
5	5.8	5.5	4	8
6	3.3	3.7	5.20	7.8
7	4.8	6.3	3.40	7.6
8	5.4	5.2	7.20	8
9	6.2	6.5	2.50	7.4
10	7.4	5.8	6	7.6
11	7.2	6.4	5	7.8
12	6.2	5.8	5.50	8.2
13	5.8	5.4	3.40	8.4
14	6.6	7	5	8
15	5.5	5.2	3.60	7.9
16	6.8	6	2.8	7.8
17	6	7.8	5.2	8.1
18	6.3	8.2	4.9	7.6
19	6.9	6.8	3.5	7.4
20	6.4	7	3.9	7.9
Mean \pm SD	5.98 \pm 0.94 [^]	6.09 \pm 1.18 [^]	4.48 \pm 1.26 ^{^@#}	7.77 \pm 0.36

F = 36.0912*, significant at 0.05 level.

Significant from Remission group

@ Significant from First presentation group

[^] Significant from Control group

Table (XX): Distribution of nephrotic patients and their controls
by serum cholesterol level (mg/dl)

No	First presentation	Remission	Relapse	Control
1	375	140	581	160
2	420	232	333	180
3	120	312	482	150
4	554	350	285	190
5	380	375	535	200
6	321	219	430	150
7	420	385	320	160
8	640	420	412	180
9	375	540	348	175
10	240	380	518	170
11	180	430	495	190
12	564	410	400	172
13	640	452	333	180
14	375	250	416	160
15	450	562	561	150
16	340	340	253	155
17	440	185	216	145
18	520	160	340	160
19	388	578	483	165
20	295	280	316	168
Mean \pm SD	401.85 \pm 137.79 [^]	350 \pm 128.97 [^]	402.85 \pm 105.64 [^]	168 \pm 15.27

F = 20.051*, significant at 0.05 level.

[^] Significant from Control group

Table (XXI): Distribution of nephrotic patients and their controls by the level of blood urea (mg/dl)

No	First presentation	Remission	Relapse	Control
1	50	22	19	30
2	45	28	22	28
3	41	35	36	24
4	19	28	29	23
5	32	51	18	25
6	17	18	56	24
7	34	22	40	26
8	32	34	45	22
9	24	24	10	30
10	22	28	41	32
11	24	32	32	35
12	22	34	42	28
13	32	31	28	22
14	38	28	50	24
15	46	51	18	22
16	42	32	10	33
17	38	28	20	20
18	51	22	38	20
19	41	26	55	24
20	33	24	40	26
Mean \pm SD	34.15 \pm 10.31	29.9 \pm 8.56	32.45 \pm 14.05	25.9 \pm 4.3

F = 2.6027, not significant at 0.05 level.

Table (XXII): Distribution of nephrotic patients and their controls
by serum creatinine level (mg/dl)

No	First presentation	Remission	Relapse	Control
1	0.3	0.6	0.7	0.8
2	0.2	1.1	0.5	0.6
3	0.8	0.8	0.6	0.3
4	0.6	1.1	0.5	0.4
5	0.8	1	0.5	0.5
6	0.7	0.7	1.2	0.4
7	0.9	0.6	1	0.3
8	1.1	0.8	1.2	0.8
9	0.7	0.6	0.3	0.6
10	0.8	0.5	1.2	0.9
11	0.7	0.7	0.9	0.8
12	0.6	0.9	1.1	0.6
13	0.9	0.8	1.1	0.8
14	1.1	0.7	0.9	0.8
15	1.2	0.9	0.5	0.6
16	0.9	0.8	0.5	0.6
17	0.6	0.7	0.8	0.5
18	1.2	0.8	0.7	0.5
19	1	0.9	0.9	0.9
20	0.9	0.9	1	0.7
Mean \pm SD	0.90 \pm 0.22 [^]	0.80 \pm 0.16	0.81 \pm 0.28 [^]	0.62 \pm 0.19

F = 5.6689*, significant at 0.05 level.

[^] Significant from Control group



Table (XXIII): Distribution of nephrotic patients and their controls by white blood cell count (thousands/mm³)

No	First presentation	Remission	Relapse	Control
1	95	75	157	92
2	57	162	118	84
3	99	72	207	91
4	76	152	148	79
5	90	95	112	62
6	123	87	98	92
7	73	98	54	86
8	110	75	61	83
9	98	92	86	65
10	110	106	112	73
11	80	114	129	91
12	75	124	86	62
13	82	85	99	79
14	80	84	138	81
15	93	97	69	6250
16	92	102	162	64
17	89	69	118	77
18	67	74	152	63
19	93	133	108	94
20	87	105	69	73
Mean \pm SD	8.870 \pm 1.568	10.005 \pm 2.605 [^]	11.415 \pm 3.89 ^{^@}	7.767 \pm 1.150

F = 7.5889*, significant at 0.05 level.

@ Significant from First presentation group

[^] Significant from Control group

Table (XXIV): Distribution of nephrotic patients and their controls by hemoglobin (g/dl)

No	First presentation	Remission	Relapse	Control
1	13.20	10.70	10.40	9.60
2	12	9.60	15	10.50
3	9.30	11	13	13.20
4	13.70	11.50	12.70	12
5	9.70	13.20	13	8.30
6	10.50	12.50	12	8.90
7	11.40	11.50	8	13.20
8	10.50	12.40	13	13.80
9	10.80	11.50	11.40	9.50
10	10.50	12.80	14	10
11	11	13.50	14.60	10.20
12	9.50	12.20	10.50	10.80
13	8.90	9.80	11	9.70
14	9	10.50	15.40	11
15	8.50	12.50	13.80	13
16	10	11.80	11.30	13.20
17	11	13	7.90	12
18	12	14	15.60	11.80
19	8.50	10.80	11.10	9.50
20	8	10.30	10.30	10.50
Mean \pm SD	10.40 \pm 1.55	11.76 \pm 1.25	12.2 \pm 2.22@	11.04 \pm 1.64

F = 4.3586*, significant at 0.05 level.

@ Significant from First presentation group

Table (XXV): Distribution of nephrotic patients and their controls by number of platelets (thousands/mm³)

No	First presentation	Remission	Relapse	Control
1	336	211	426	330
2	390	545	452	240
3	394	240	311	280
4	350	630	379	360
5	335	308	528	290
6	693	285	430	412
7	380	340	440	430
8	380	280	285	275
9	380	320	440	423
10	240	450	280	218
11	180	390	420	335
12	230	420	370	265
13	420	420	410	345
14	268	390	419	238
15	360	450	447	418
16	268	390	450	240
17	360	320	500	330
18	390	280	491	280
19	342	455	544	290
20	299	270	391	296
Mean \pm SD	349.75 \pm 103.24	369.70 \pm 105.08	420.65 \pm 71.410 [^]	314.75 \pm 66.26

F = 5.0185*, significant at 0.05 level.

[^] Significant from Control group

Table (XXVI): Distribution of nephrotic patients and their controls
By the presence of white blood cells in urine/HPF

No	First presentation	Remission	Relapse	Control
1	9	1	40	1
2	100	4	23	1
3	3	2	6	2
4	13	4	13	1
5	11	4	9	2
6	4	2	11	1
7	35	9	4	1
8	11	3	7	2
9	3	7	7	1
10	2	3	11	2
11	1	3	55	2
12	9	4	5	1
13	11	6	9	1
14	25	3	14	2
15	12	2	5	1
16	13	3	7	1
17	30	4	7	1
18	11	2	2	2
19	9	1	5	1
20	36	2	6	1
Mean \pm SD	17.4 \pm 22.05 [^]	3.45 \pm 1.99 [@]	12.3 \pm 13.1 [^]	1.36 \pm 0.49

F = 6.8562*, significant at 0.05 level.

@ Significant from First presentation group

[^] Significant from Control group

Table (XXVII): Distribution of nephrotic patients and their controls by serum level of IL-1 β (pg/ml)

No	First presentation	Remission	Relapse	Control
1	640	6	60	8
2	870	11	1933	2
3	230	5	101	1
4	912	109	250	9
5	136	195	163	7
6	9400	45	2320	5
7	330	148	1667	5
8	180	50	208	3
9	240	259	72	12
10	510	50	180	4
11	275	34	140	5
12	1140	86	690	6
13	1280	4	392	4
14	1440	37	198	10
15	1210	330	450	5
16	1430	34	199	8
17	890	12	1280	9
18	770	18	172	6
19	1250	20	270	5
20	1030	14	2400	5
Mean \pm SD	1208.15 \pm 1977.51	73.35 \pm 91.64	657.25 \pm 790.52	5.95 \pm 2.74

Kruskall Wallis $X^2_3 = 59.741$

First presentation – Control
 First presentation -Remission
 Remission – Control
 Relapse– Remission
 First presentation –Relapse
 Relapse – Control

Z = 5.42 significant, $p < 0.05$
 Z = 5.07 significant, $p < 0.05$
 Z = 4.41 significant, $p < 0.05$
 Z = 4.36 significant, $p < 0.05$
 Z = 1.87 not significant, $p > 0.05$
 Z = 5.92 significant, $p < 0.05$

Table (XXVIII): Distribution of nephrotic patients and their controls by serum level of IL-6 (pg/ml)

No	First presentation	Remission	Relapse	Control
1	240	9	30	3
2	300	7	280	2
3	167	9	80	8
4	460	27	52	1
5	185	47	70	4
6	460	4	540	6
7	198	10	560	8
8	160	6	70	2
9	230	154	58	3
10	480	46	50	5
11	240	19	92	4
12	730	117	142	1
13	680	7	615	7
14	760	19	117	6
15	840	60	165	3
16	760	65	95	3
17	230	8	135	3
18	200	6	54	4
19	680	14	60	6
20	970	5	160	2
Mean \pm SD	448.5 \pm 268.32	31.95 \pm 40.6	171.25 \pm 182.07	4.05 \pm 2.16

Kruskall Wallis $X^2_3 = 65.6820^*$

First presentation – Control

Remission – First presentation

Remission – Control

Relapse– Remission

Relapse – First presentation

Relapse – Control

Z = 5.42 significant, $p < 0.05$

Z = 5.41 significant, $p < 0.05$

Z = 4.61 significant, $p < 0.05$

Z = 4.37 significant, $p < 0.05$

Z = 4.07 significant, $p < 0.05$

Z = 5.42 significant, $p < 0.05$

Table (XXIX): Distribution of nephrotic patients and their controls by serum TNF level (pg/ml)

No	First presentation	Remission	Relapse	Control
1	48	3	48	2
2	52	9	25	6
3	60	4	50	6
4	62	23	20	8
5	45	15	23	4
6	68	14	36	2
7	48	12	23	3
8	65	16	28	10
9	54	40	47	6
10	72	19	40	7
11	69	5	24	8
12	62	240	34	9
13	45	2	25	12
14	42	5	29	4
15	50	146	60	3
16	62	18	55	2
17	60	3	120	5
18	68	2	84	6
19	52	5	41	4
20	48	4	65	4
Mean \pm SD	56.6 \pm 9.26	29.25 \pm 58.78	43.85 \pm 24.61	5.55 \pm 2.8

Kruskall Wallis $X^2_3 = 51.424$

First presentation – Control
 First presentation – Remission
 Remission – Control
 Relapse – Remission
 First presentation – Relapse
 Relapse – Control

Z = 5.4197 significant, $p < 0.05$
 Z = 4.3319 significant, $p < 0.05$
 Z = 1.9150 not significant, $p > 0.05$
 Z = 3.9923 significant, $p < 0.05$
 Z = 2.9655 significant, $p < 0.05$
 Z = 5.4171 significant, $p < 0.05$

Table (XXX): Distribution of nephrotic patients and their controls by level of urinary β -2 microglobulin (ug/ml)

No	First presentation	Remission	Relapse	Control
1	3.4	0.1	1.25	0.5
2	2.8	0.25	0.5	1.5
3	2.5	0.03	0.25	1.2
4	3.6	0.7	2.1	0.2
5	2.4	0.1	1.5	2
6	3.1	0.4	2	3
7	2.2	0.6	1.9	2.3
8	4.1	0.8	23	1.4
9	0.56	17	0.35	1.6
10	1.75	3.1	0.6	1.8
11	0.75	0.1	0.2	0.4
12	18	10	1.2	1.9
13	14	0.1	0.2	0.3
14	12	0.1	18	2.4
15	8	13	3	3.1
16	12	1.9	3.7	1.5
17	2.5	0.2	4.2	0.7
18	3.8	0.3	3.6	0.6
19	13	0.4	6	0.5
20	10	0.5	25	0.5
Mean \pm SD	6.02 \pm 5.21	2.48 \pm 4.87	4.93 \pm 7.61	1.37 \pm 0.9

Kruskall Wallis $\chi^2_3 = 21.86$

First presentation - Control

Fist presentation -Remission

Remission - Control

Relapse- Remission

First presentation -Relapse

Relapse - Control

Z = 4.17 significant, $p < 0.05$

Z = 3.62 significant, $p < 0.05$

Z = 1.94 not significant, $p > 0.05$

Z = 2.44 significant, $p < 0.05$

Z = 1.87 not significant, $p > 0.05$

Z = 5.92 significant, $p < 0.05$

Table (XXXI): IL-1 β , IL-6, TNF, and β 2-microglobulin in nephrotic patients and their controls

	First presentation	Remission	Relapse	Control	Chi square
IL-1B					
Negative	0 (0%)	8 (40%)	0 (0%)	20 (100%)	58.90*
Positive	20 (100%)	12 (60%)	20 (100%)	0 (0%)	
IL-6					
Negative	0 (0%)	7 (35%)	0 (0%)	20 (100%)	59.65*
Positive	20 (100%)	13 (65%)	20 (100%)	0 (0%)	
TNF					
Negative	0 (0%)	12 (60%)	0 (0%)	20 (100%)	60.00*
Positive	20 (100%)	8 (40%)	20 (100%)	0 (0%)	
B2-microglobulin					
Negative	13 (65%)	17 (85%)	9 (45%)	20 (100%)	17.76*
Positive	7 (35%)	3 (15%)	11 (55%)	0 (0%)	

* Significant, $P < 0.05$.

Table (XXXII): Multiple logistic regression analysis for predicting relapse group from remission group.

Variable	B	Sig	R	Exp (B)
TNF	11.1191	.8146	.0000	67448.99
Constant	10.2028	.8296	-	-

Table (XXXIII): Multiple logistic regression analysis for predicting remission group from control group

Variable	B	Sig	R	Exp (B)
IL-1 β	10.4269	.8725	.0000	33754.91
IL-6	10.7667	.8640	.0000	47416.95
Constant	1.3863	.0056	-	-

Table (XXXIV): Multiple logistic regression for predicting cases in remission with cases of first presentation after exclusion of proteinuria and urinary casts

Variable	B	Sig	R	Exp (B)
TNF	19.17	0.7382	0.00	2.12x10 ⁸
Hemoglobin	3.17	0.0261	-0.2305	0.0420
Systolic blood pressure	0.24	0.040	-0.200	0.7869
Constant	48.61	0.4390	-	-

Fig (1): Interleukin-1 β (IL-1 β) of the control and nephrotic groups

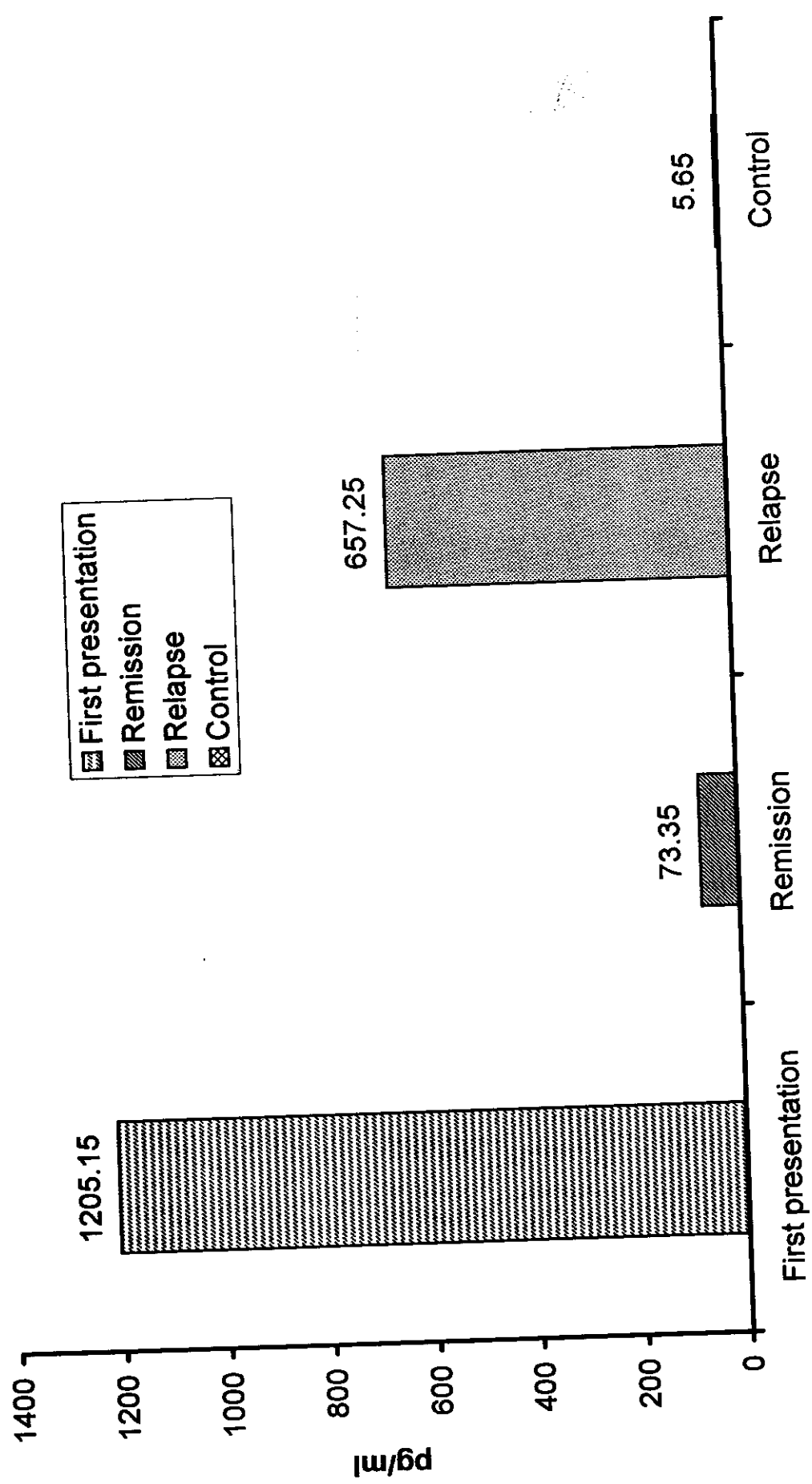


Fig (2): Interleukin (IL-6) of the control and nephrotic groups

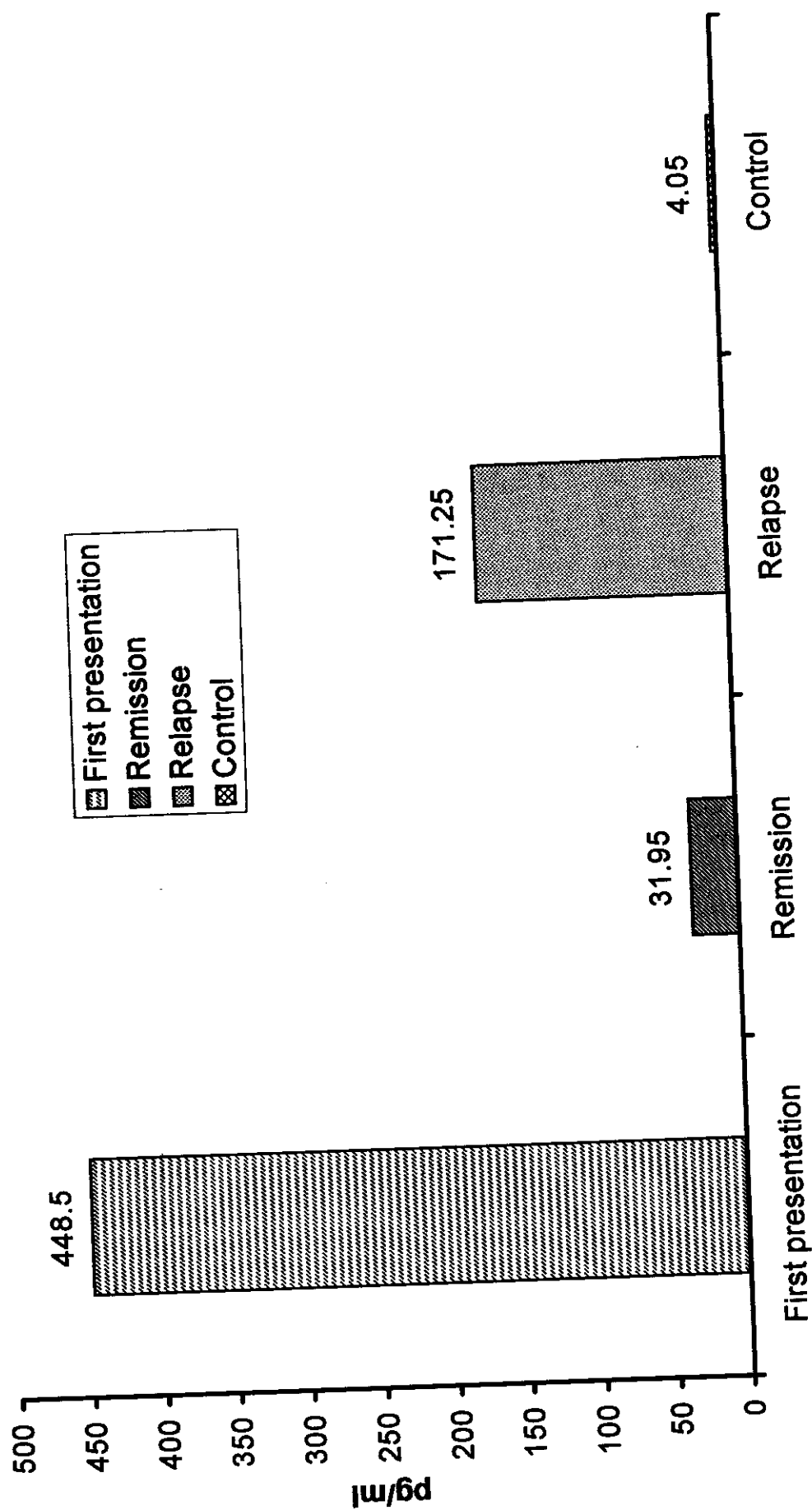


Fig (3): Tumour necrosis factor (TNF) of the control and nephrotic groups

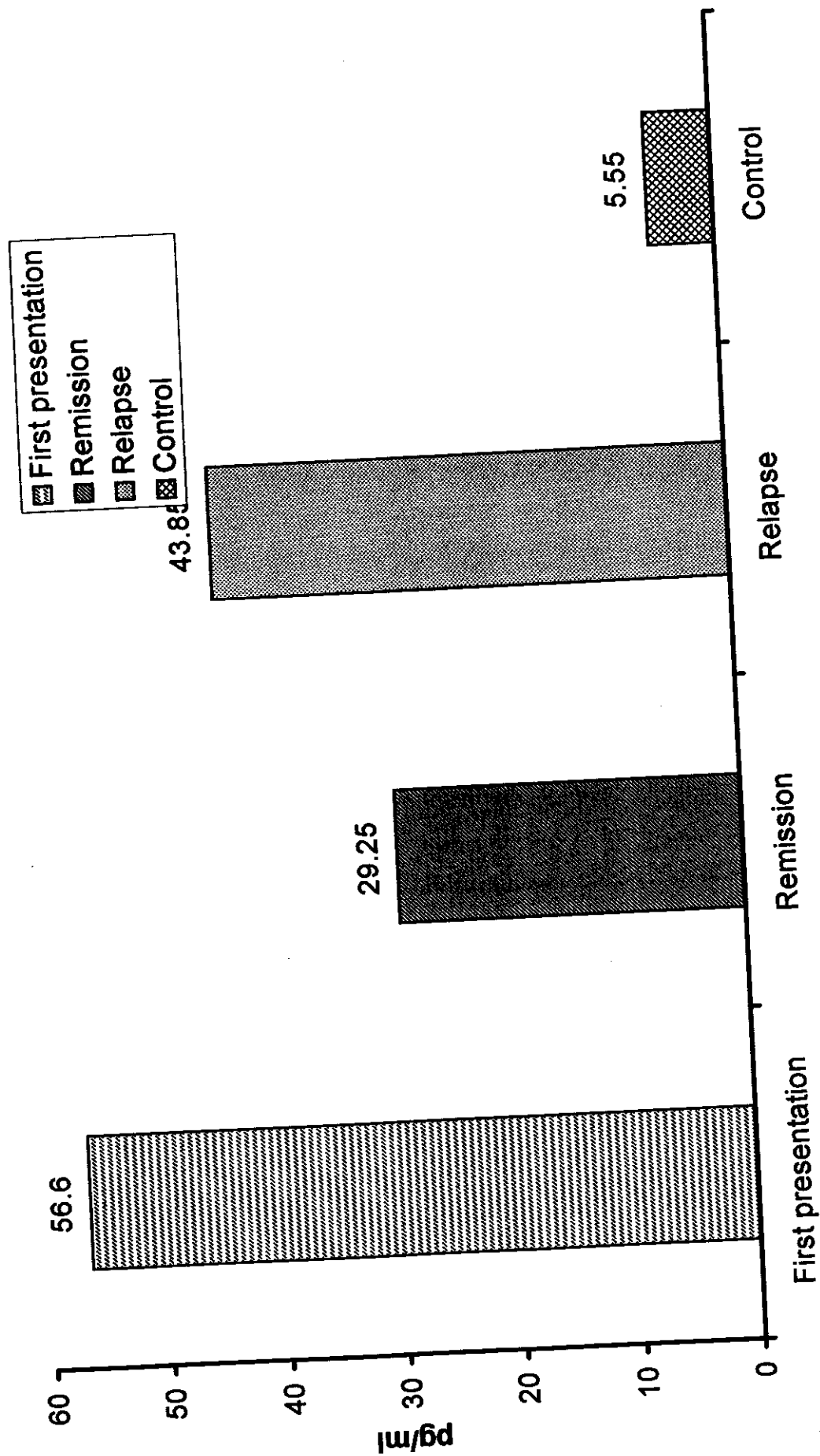


Fig (4): Beta-2 microglobulin of the control and nephrotic groups

