R E S U L T S

Table (1): Shows that subjects were :

. 14 male (70 %).

. 6 female (30 %).

. Age in years ranged from 21 to 57 (mean age was 36.7±11.04).

. Duration of hemodialysis in months ranged from 6 to 52 months with mean duration of hemodialysis was 22.65±13.94.

Table (2): Illustrated by Figure I shows :

Mean serum creatinine of all cases before hemodialysis was 10.54 ± 2.55 mg/100 ml dropped to 7.04 ± 2.23 mg/100 ml after hemodialysis and this decrease is statistically signigicant ($P < 0.001$).

Table (3): Illustrated by Figure II shows :

Blood urea level before and after hemodialysis ,the mean value before hemodialysis was 215.35 ± 70.32 mg/100 ml dropped to 171.55 ± 64.59 mg/100 ml just after hemodialysis and thia decrease is statistically significant ($P < 0.05$).

Table (4): Shows :

Hematocrite value both before and after hemodialysis the mean value was 0.379 ± 0.023 before dialysis increased

to 0.380 ± 0.023 after dialysis and this increase is statistically insignificant ($P > 0.05$).

Table (5): Shows;

Heart rate before, during "two hours after begining of hemodialysis" and just immediately after hemodialysis was with mean value of 88 ± 13.17, 92.4 ± 13.42 and 93.35±14.94 respectively.

It is clearly evident that there was a non significantly increase in heart rate from before to immediately just after hemodialysis ($P > 0.05$).

Again there was a non significant increase in heart rate from before to two hours after begining of hemodialysis ($P > 0.05$).

Also there was a nonsignificant increase in heart rate from two hours after begining of hemodialysis to just immediately after hemodialysis ($P > 0.05$).

No other arrhythmias were detected in our subjects before, during or after hemodialysis.

Table (6): Illustrated by Figure III shows:
The blood pressure both before and after hemodialysis was

mean value of 162.5/104.25 ± 23.14/±13.40 and 133/86±18.6/ ±12.2 respectively and this decrease in blood pressure is statistically significant ($P < 0.001$).

Table (7): Illustrated by Figure IV shows:

The mean value of serum K^+ in mmol/L just before, during "two hours after begining of hemodialysis" and just immediately after hemodialysis was 5.580 ± 0.624, 4.905 ± 0.465 and 4.650 ± 0.476 respectively, with significant decrease in serum potassium level two hours during hemodialysis in relation to before hemodialysis ($P < 0.001$).

Again there was a decrease in serum potassium immediately just after hemodialysis in relation to before hemodialysis, this decrease is statistically significant($P<0.001$).

Table (8): Illustrated by Figure V shows :

The mean value of serum Na^+ level in mmol/L just before, during "two hours after begining" and just immediately after hemodialysis was "134.75 ± 1.82, 136.35 ± 1.340 and 139.45 ±1.100" respectively.

The increase in serum Na^+ level from just before to two hours after begining of hemodialysis is significant ($P < 0.01$).

Again the increase in serum Na^+ level from just before in relation to just immediately after hemodialysis is significant ($P < 0.001$).

Also the increase in serum Na^+ level from two hours after begining of hemodialysis to just immediately after hemodialysis was statistically significant ($P < 0.01$).

Table (9): Illustrated by Figure IV shows:

The mean value of serum calcium in mg/100 ml just before, during "two hours after begining" and just immediately after hemodialysis was 7.550 ± 0.774 , 7.855 ± 0.738 and 8.415 ± 0.789 respectively.

There was a non significant increase in serum Ca^{++} level from just before to two hours after begining of hemodialysis ($P > 0.05$).

But there was a significant increase in serum calcium level from just before to immediately just after hemodialysis ($P < 0.01$).

There was also a significant increase in serum calcium level during "two hours after begining of hemodialysis to just immediately after hemodialysis ($P < 0.05$).

Table (10): Illustrated by Figure VII shows:

The mean value of P - R interval in second just before , during "two hours after begining" and just immediately after hemodialysis was (0.157 ± 0.014), (0.158 ± 0.016) and(0.159 ±0.012) respectively. These changes was statistically non-significant.

Table (11): Illustrated by Figure VIII shows:-

The mean value of QRS duration in second just before,during "two hours after begining" and just immediately after hemodialysis was (0.056 ± 0.0127), (0.057 ± 0.0121) and (0.062 ± 0.0128) respectively. These changes were statistically non significant ($P > 0.05$).

Table (12): Illustrated by Figure IX shows:

The mean of corrected Q-T "Q-Tc" in seconds just before, during "two hours after begining" and just immediately after hemodialysis was (0.402 ± 0.016), (0.411±0.010) and(0.423± 0.010) respectively.

There was a statistically significant increase in duration of "Q-Tc" from just before to two hours after begining of hemodialysis ($P < 0.05$).

Again there was a statistically significant increase in duration of "Q-Tc" from just before to just immediately after hemodialysis ($P < 0.001$).

There was also a statistically significant increase in duration of corrected Q-T from two hours after begining to just immediately after hemodialysis ($P < 0.001$).

Table (13): Illustrated by Figure X shows:

The mean of duration of S - T segment just before two hours after begining and just immediately after hemodialysis was "0.319 ± 0.016", "0.315 ± 0.005" and "0.314 ± 0.005" respectively.

These changes was statistically insignificant ($P > 0.05$).

Figures XI,XII,XIII and XIV show that there were no statistically significant relation between duration of corrected Q - T interval in second and serum creatinine in mg/100 ml and blood urea in mg/100 ml both before and after hemodialysis ($P > 0.05$).

Figures XV,XVI,XVII,XVIII,XIX,XX, XXI,XXII,XXIII show that there were no statistically significant relation between duration of corrected Q - T interval and serum potassium,sodium and calcium, before, during and after hemodialysis ($P > 0.05$).

Table (1)

Distribution of patients according to age, sex and duration of dialysis.

Patient number.	Age in year	Sex	Duration of hemodialysis in months.
1	38	Male	7
2	40	Male	18
3	22	Male	8
4	37	Female	12
5	29	Female	38
6	53	Male	6
7	55	Male	19
8	33	Male	8
9	45	Female	41
10	46	Male	52
12	21	Male	14
13	57	Female	29
14	22	Male	15
15	30	Female	32
16	25	Male	17
17	29	Male	24
18	34	Female	32
19	36	Male	11
20	48	Male	48
Mean	36.7		22.65
S.D	±11.04		±13.94

Table (2)

Patient's serum creatinine in mg/100 ml

before and after hemodialysis.

Patient number.	Before hemodialysis	After hemodialysis
1	11.2	8.1
2	8.3	5.2
3	10.6	6.3
4	9.3	5.0
5	11.4	7.9
6	16.1	11.5
7	14.8	9.2
8	10.5	5.8
9	7.4	4.5
10	7.1	3.1
11	8.8	6.0
12	9.15	6.3
13	7.7	5.1
14	10.5	7.1
15	11.2	8.0
16	9.8	6.1
17	8.7	6.2
18	10.1	7.9
19	13.2	10.5
20	15.1	11.0
Mean	10.54	7.04
S.D	±2.55	±2.23

t = 4.62 P < 0.001.

Table (3)

Patient's blood urea before and after hemodialysis.

Patient number.	Before hemodialysis	After hemodialysis
1	212	163
2	196	154
3	301	263
4	165	121
5	123	92
6	296	245
7	187	151
8	208	171
9	118	78
10	214	165
11	290	234
12	111	86
13	162	126
14	306	243
15	302	251
16	264	210
17	176	128
18	304	262
19	256	212
20	116	76
Mean	215.35	171.55
S.D	±70.32	±64.59

$t = 2.07$ $P < 0.05$

Table (4)

Patient's hematocrit value
before and after hemodialysis.

Patient number	Before hemodialysis	After hemodialysis
1	0.38	0.38
2	0.39	0.40
3	0.40	0.40
4	0.35	0.35
5	0.34	0.34
6	0.38	0.38
7	0.41	0.40
8	0.36	0.37
9	0.37	0.37
10	0.41	0.41
11	0.39	0.40
12	0.42	0.41
13	0.39	0.39
14	0.34	0.35
15	0.36	0.35
16	0.37	0.36
17	0.38	0.38
18	0.35	0.36
19	0.39	0.40
20	0.40	0.41
Mean	0.379	0.380
S.D	±0.023	±0.023

t = 0.13 P > 0.05

Table (5)

Patient's heart rate before, during and after hemodialysis

Patient number.	(1) Before hemodialysis .	(2) During hemodialysis "two hours after begining" of hemo-dialysis.	(3) After hemodialysis
1	64	68	72
2	92	96	98
3	100	102	104
4	84	86	92
5	82	86	86
6	90	94	96
7	94	102	102
8	82	88	88
9	94	100	102
10	78	86	88
11	100	102	102
12	122	122	120
13	70	72	72
14	112	114	116
15	70	72	74
16	76	86	88
17	92	96	96
18	84	90	90
19	80	86	86
20	94	100	102
Mean	88	92.4	93.35
S.D	±13.17	±13.42	±14.94

t 1 versus 2 = 1.046 P > 0.05, t 1 versus 3 = 1.200 P >0.05

t 2 versus 3 = 0.210 P > 0.05.

Table (6)

Patient's blood pressure before and after hemodialysis.

Patient number.	Before hemodialysis	After hemodialysis
1	180/100	150/90
2	140/90	120/70
3	170/105	130/90
4	180/110	160/100
5	150/110	120/80
6	190/120	170/100
7	180/120	150/100
8	120/70	100/60
9	170/100	130/80
10	160/105	130/85
11	190/120	150/100
12	150/110	130/90
13	150/100	120/80
14	110/80	100/70
15	160/105	130/80
16	190/110	140/100
17	170/120	130/100
18	140/120	110/70
19	160/110	140/85
20	190/110	150/90
Mean	162.5/104.25	133/86
S.D	± 23.14/±13.40	±18.6/±12.2

t s = 4.440 P < 0.001

t D = 4.504 P < 0.001

Table (7)

Patient's serum potassium in mmol/L
before, during and after hemodialysis.

Patient number.	(1) Before hemodialysis	(2) During hemodialysis "two hours after its begining".	(3) After hemodialysis
1	7	5.5	5.4
2	6.5	5.6	5.2
3	6.0	5.4	5.1
4	5.1	4.9	4.2
5	5.2	4.9	4.1
6	5.1	4.5	4.4
7	4.6	4.5	4.2
8	4.9	4.5	4.1
9	6.1	4.9	4.8
10	5.6	4.8	4.5
11	5.6	4.3	4.2
12	5.2	4.6	4.4
13	5.9	4.5	4.3
14	5.3	5.2	5.0
15	5.5	5.5	5.1
16	4.9	4.0	4.0
17	5.2	4.7	4.6
18	5.3	4.9	4.7
19	6.4	5.5	5.4
20	6.2	5.4	5.3
Mean	5.580	4.905	4.650
S.D	±0.624	±0.465	±0.476

t 1 versus 2 = 3.88 P < 0.001
t 1 versus 3 = 5.30 P < 0.001
t 2 versus 3 = 1.71 P > 0.05

Table (8)

Patient's serum sodium in mmol/1L
before, during and after hemodialysis.

Patient's number.	(1) Before hemodialysis	(2) During hemodialysis two hours after its beginning.	(3) After hemodialysis
1	134	136	140
2	133	135	139
3	136	136	140
4	137	138	141
5	135	136	139
6	136	138	139
7	133	137	139
8	132	137	140
9	133	135	138
10	133	136	140
11	137	138	141
12	136	138	140
13	133	135	137
14	136	136	140
15	133	133	140
16	137	137	140
17	134	136	140
18	133	135	137
19	136	138	140
20	133	137	139
Mean	134.75	136.35	139.45
S.D	±1.682	±1.34	±1.10

t 1 versus 2 = 3.327 P < 0.01

t 1 versus 3 = 10.45 P < 0.001

t 2 versus 2 = 2.99 P < 0.01

Table (9)

Patient's serum calcium in mg/100 ml
before, during and after hemodialysis.

Patient number.	(1) Before hemodialysis	(2) During hemodialysis two hours after its begining.	(3) After hemodialysis
1	7.7	7.9	8.2
2	6.6	7.2	8.0
3	7.3	7.4	7.9
4	6.2	6.8	7.3
5	7.5	7.8	8.2
6	8.0	8.6	9.2
7	6.7	7.0	7.5
8	7.6	7.6	8.1
9	9.0	9.3	10.1
10	8.6	8.8	9.1
11	7.0	7.3	7.8
12	6.6	7.0	7.5
13	7.9	8.0	8.2
14	7.2	7.5	8.3
15	8.9	9.1	9.7
16	7.4	7.6	8.4
17	8.2	8.6	9.4
18	7.6	8.1	8.6
19	8.1	8.4	9.2
20	8.9	7.1	7.6
Mean	7.550	7.855	8.415
S.D	±0.774	±0.738	±0.789

t 1 versus 2 = 1.275 P > 0.05

t 1 versus 3 = 3.5 P < 0.01

t 2 versus 3 = 2.318 P < 0.05

Table (10)

Patient's P-R interval before, during and after hemodialysis.

Patient number.	(1) Before hemodialysis	(2) During hemodialysis two hours after its begining.	(3) After hemodialysis
1	0.16	0.16	0.17
2	0.15	0.15	0.16
3	0.14	0.15	0.15
4	0.15	0.15	0.16
5	0.15	0.15	0.16
6	0.16	0.16	0.15
7	0.16	0.16	0.16
8	0.16	0.16	0.17
9	0.17	0.17	0.18
10	0.16	0.16	0.17
11	0.16	0.16	0.16
12	0.15	0.16	0.17
13	0.16	0.16	0.17
14	0.20	0.17	0.16
15	0.14	0.15	0.12
16	0.15	0.15	0.15
17	0.16	0.16	0.16
18	0.18	0.17	0.17
19	0.14	0.14	0.15
20	0.15	0.15	0.15
Mean	0.157	0.158	0.159
S.D	±0.014	±0.016	±0.012

t 1 versus 2 = 0.21 P > 0.05

t 1 versus 3 = 0.485 P > 0.05

t 2 versus 3 = 0.223 P > 0.05

Table (12)

Patient's Q - TC in second
before, during and after hemodialysis.

Patient number.	(1) Before hemodialysis	(2) During hemodialysis 2 hours after its beginning.	(3) After hemodialysis
1	0.407	0.416	0.420
2	0.406	0.426	0.439
3	0.402	0.410	0.415
4	0.401	0.421	0.436
5	0.400	0.412	0.422
6	0.403	0.411	0.416
7	0.406	0.409	0.418
8	0.410	0.412	0.420
9	0.401	0.431	0.443
10	0.412	0.418	0.443
11	0.406	0.408	0.417
12	0.411	0.411	0.421
13	0.349	0.372	0.387
14	0.405	0.421	0.432
15	0.406	0.411	0.421
16	0.406	0.412	0.426
17	0.403	0.408	0.418
18	0.410	0.413	0.422
19	0.403	0.413	0.419
20	0.388	0.392	0.421
Mean	0.402	0.411	0.423
S.D	±0.016	±0.010	±0.010

t 1 versus 2 = 2.133 P < 0.05

t 1 versus 3 = 4.977 P < 0.001

t 2 versus 3 = 3.797 P < 0.001

Table (13)

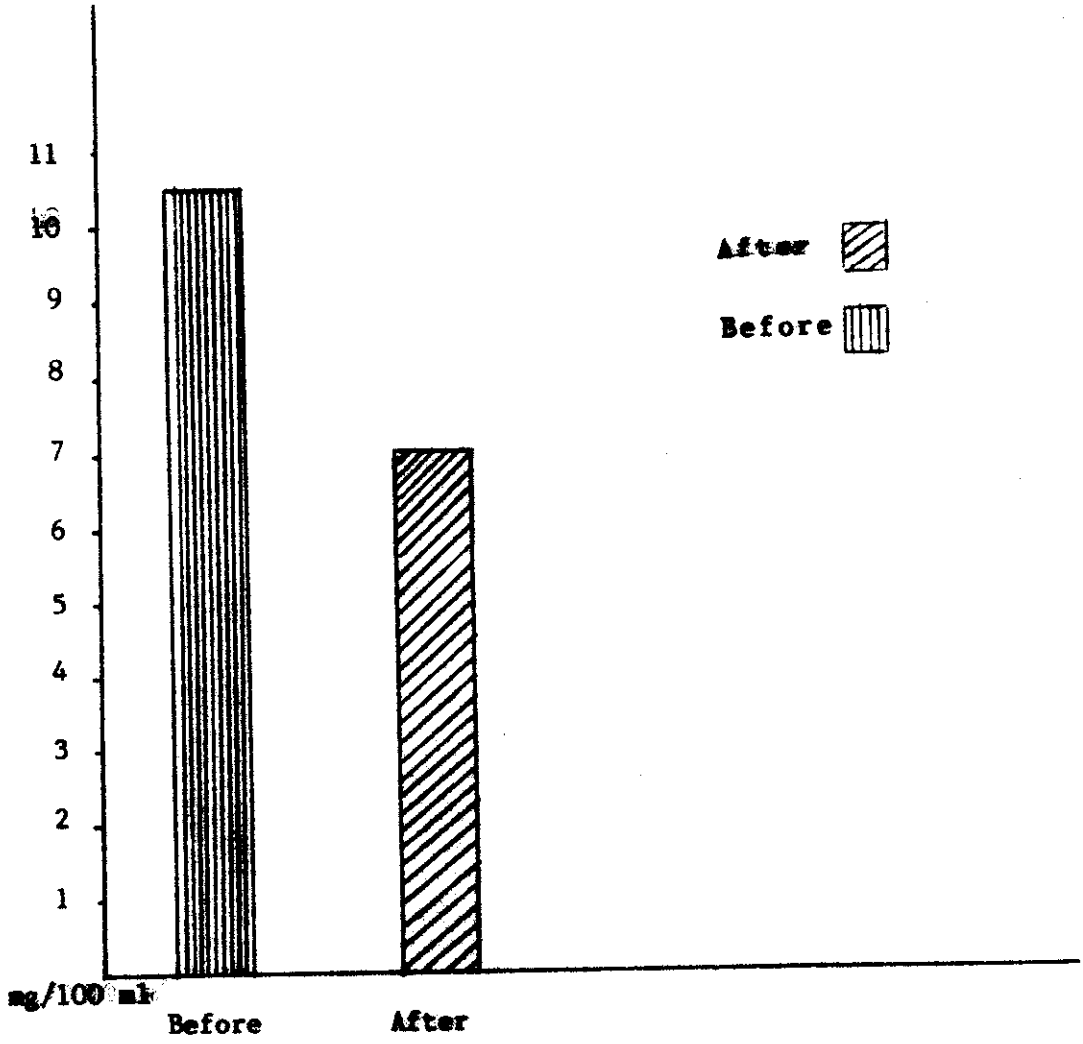
Patient's S - T segment duration
before, during and after hemodialysis.

Patient Patient number	(1) Before hemodialysis	(2) During "two hours after begining of hemodialysis".	(3) After hemodialysis
1	0.32	0.32	0.31
2	0.31	0.31	0.31
3	0.31	0.31	0.32
4	0.31	0.31	0.31
5	0.33	0.32	0.31
6	0.32	0.32	0.32
7	0.33	0.32	0.32
8	0.31	0.31	0.31
9	0.31	0.31	0.31
10	0.321	0.31	0.31
11	0.31	0.31	0.31
12	0.32	0.32	0.32
13	0.33	0.32	0.32
14	0.33	0.32	0.31
15	0.32	0.31	0.31
16	0.32	0.31	0.31
17	0.32	0.32	0.32
18	0.31	0.31	0.31
19	0.33	0.32	0.32
20	0.32	0.31	0.32
Mean	0.319	0.315	0.314
S.D	±0.016	±0.005	±0.005

t 1 versus 2 = 1.08 P > 0.05

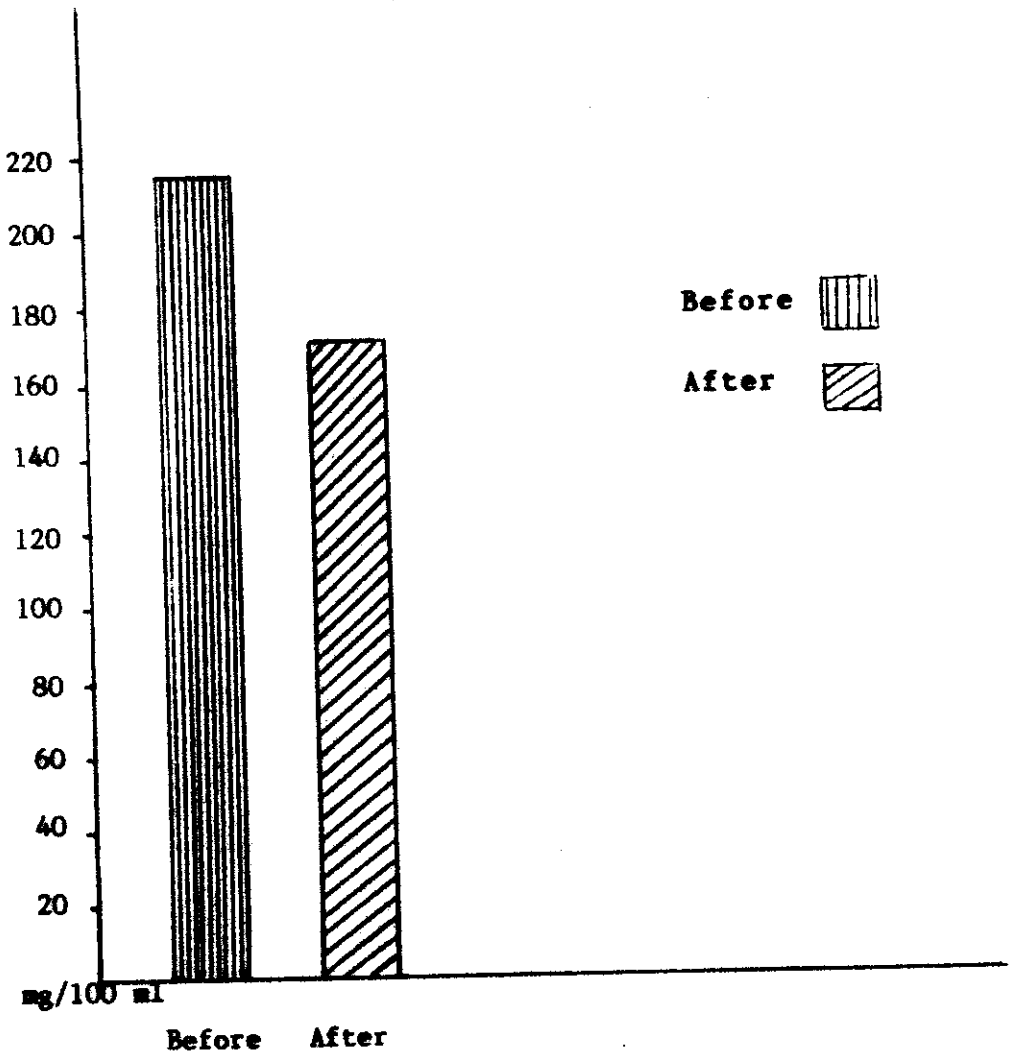
t 1 versus 3 = 1.35 P > 0.05

t 2 versus 3 = 0.6 P > 0.05



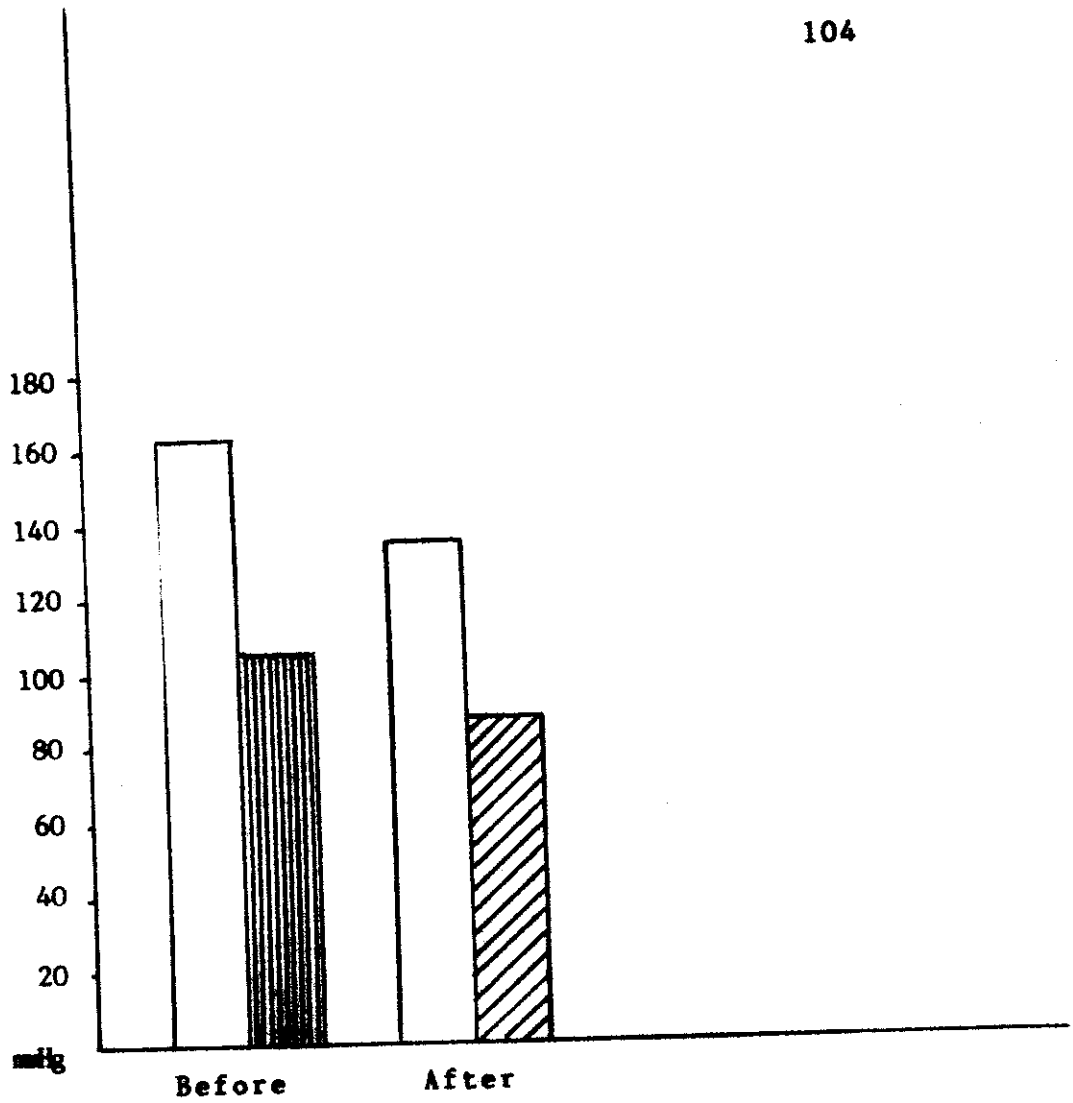
Patient's serum creatinine in mg/100 ml before and after dialysis. "Mean".

Figure (I)



Patient's blood urea in mg/100 ml before and after dialysis."Mean".

Figure (II)

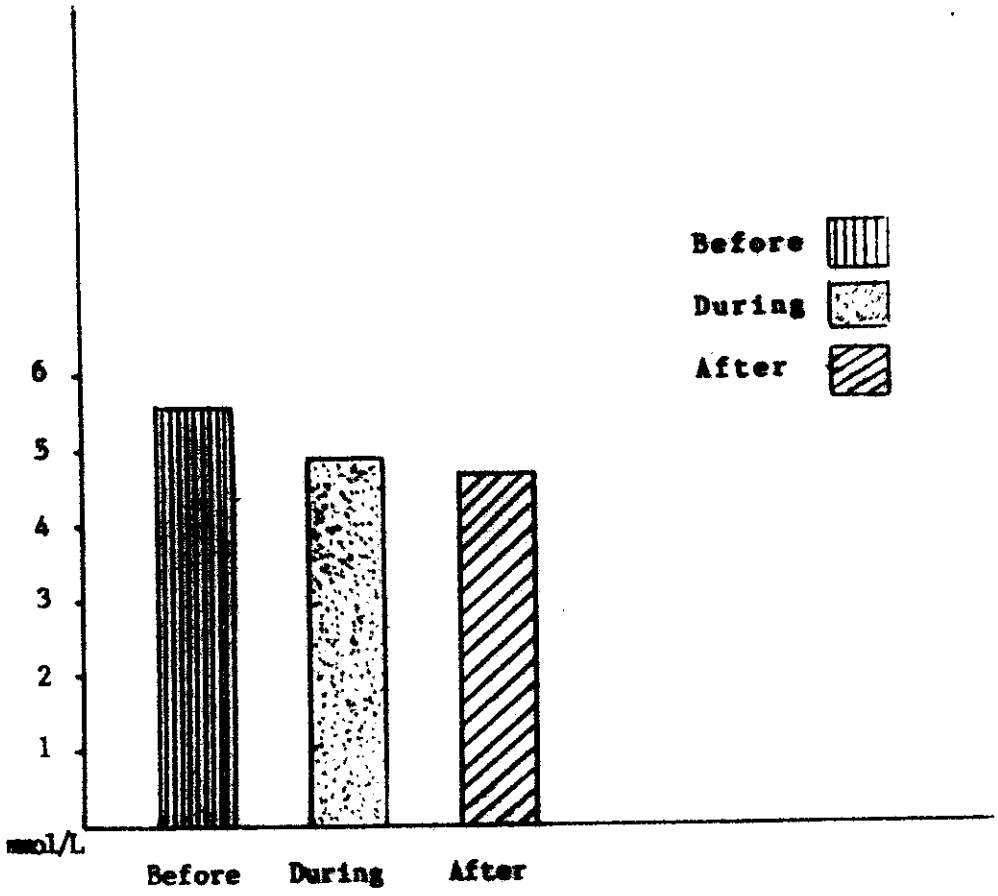


Patient's blood pressure both systolic and diastolic before and after dialysis "Mean" .

Figure (III)

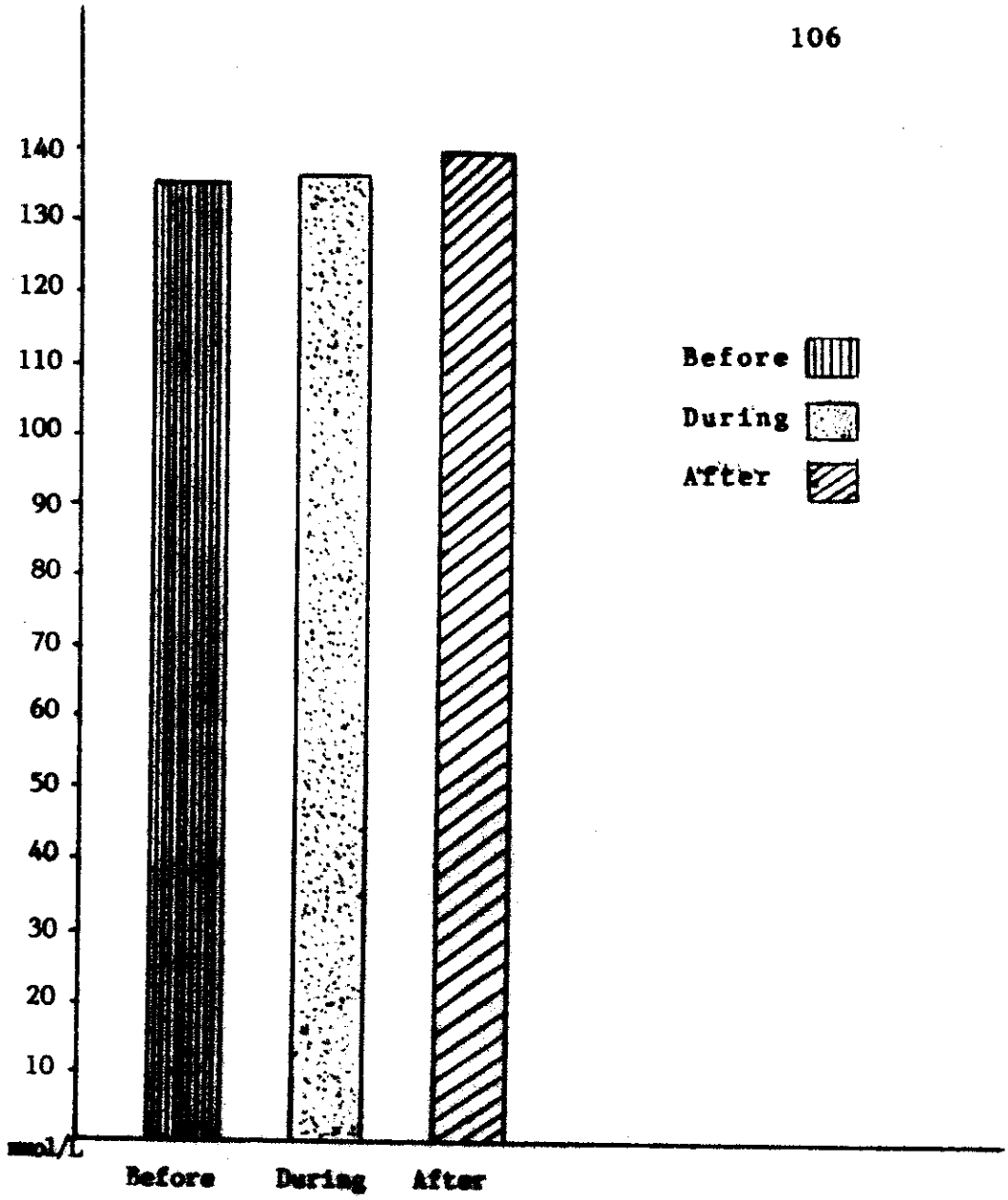
Systolic

Diastolic



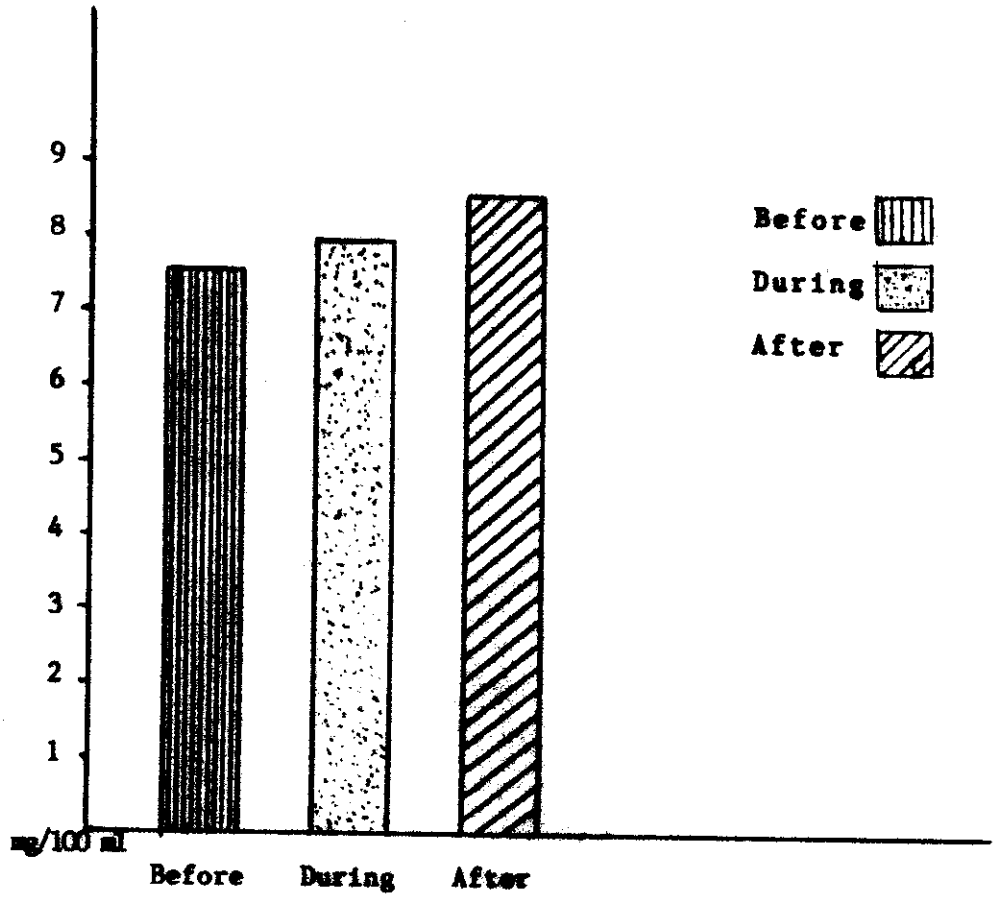
Patient's serum potassium in mmol/L before,during and after hemodialysis "Mean".

Figure (IV)



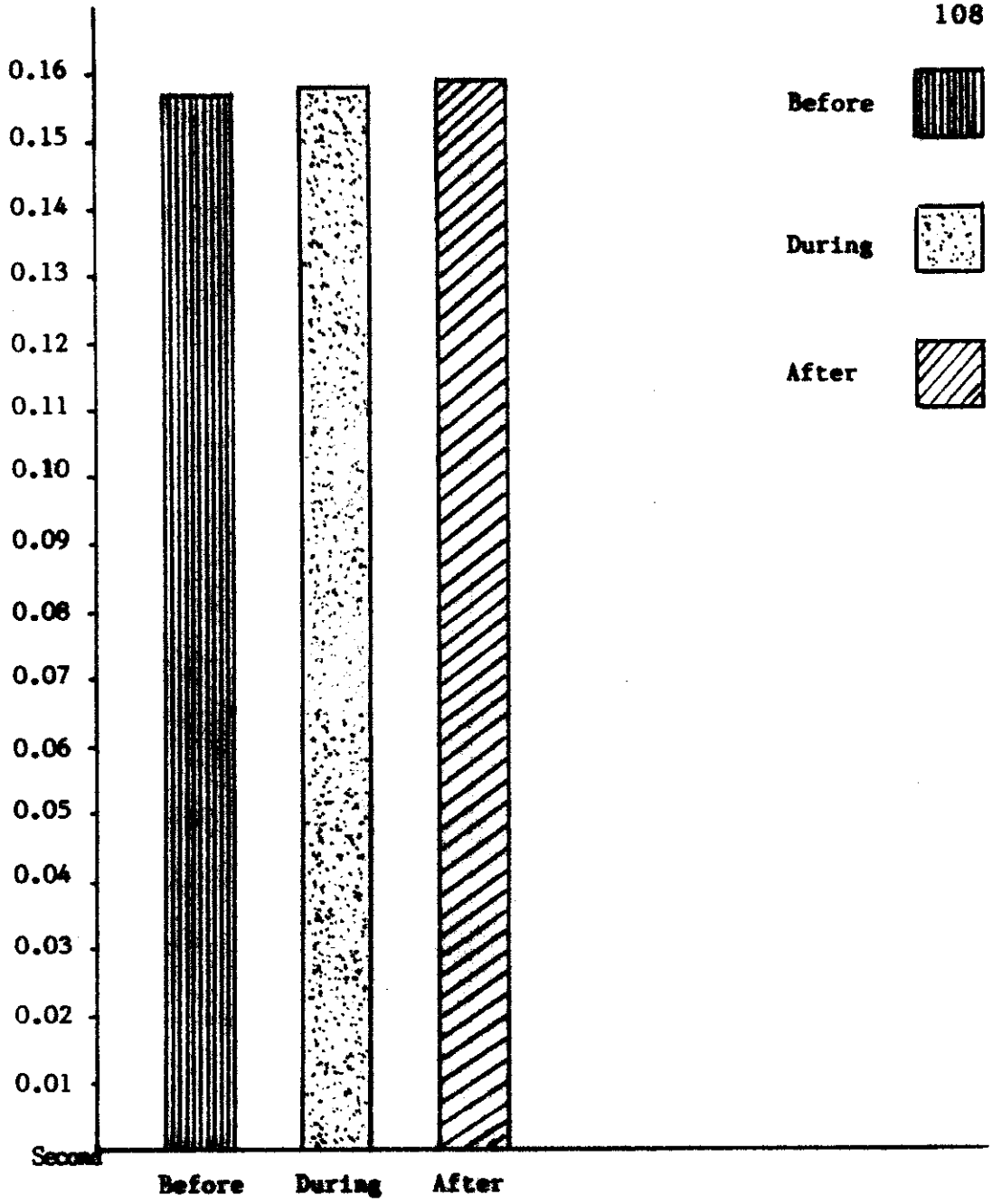
Patient's serum sodium in mmol/L before, during and after hemodialysis "Name".

Figure (V)



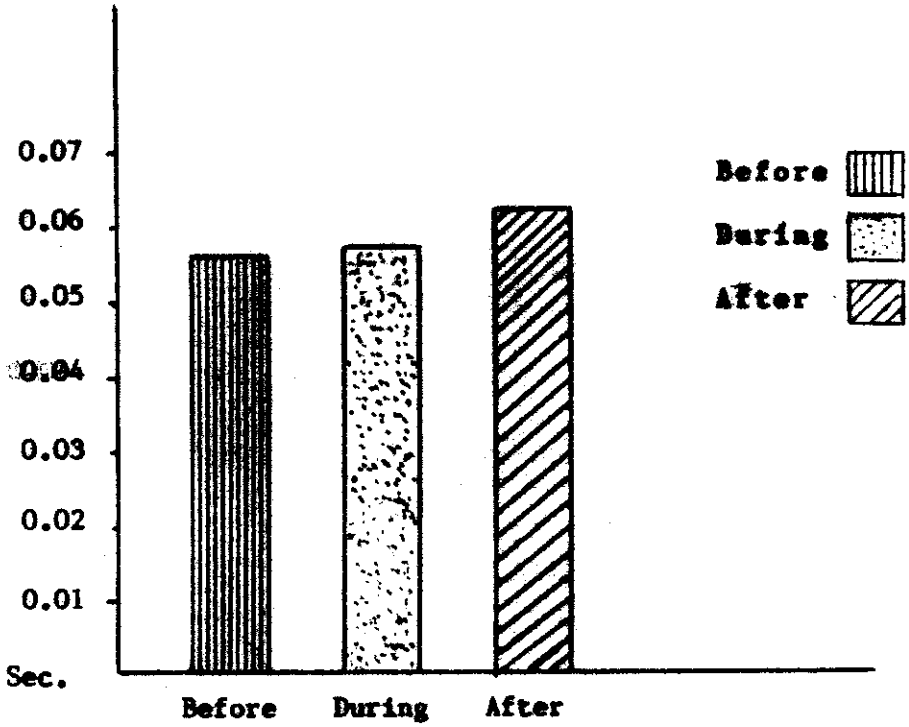
Patient's serum calcium before, during and after Dialysis in mg/100 ml "Mean".

Figure (VI)



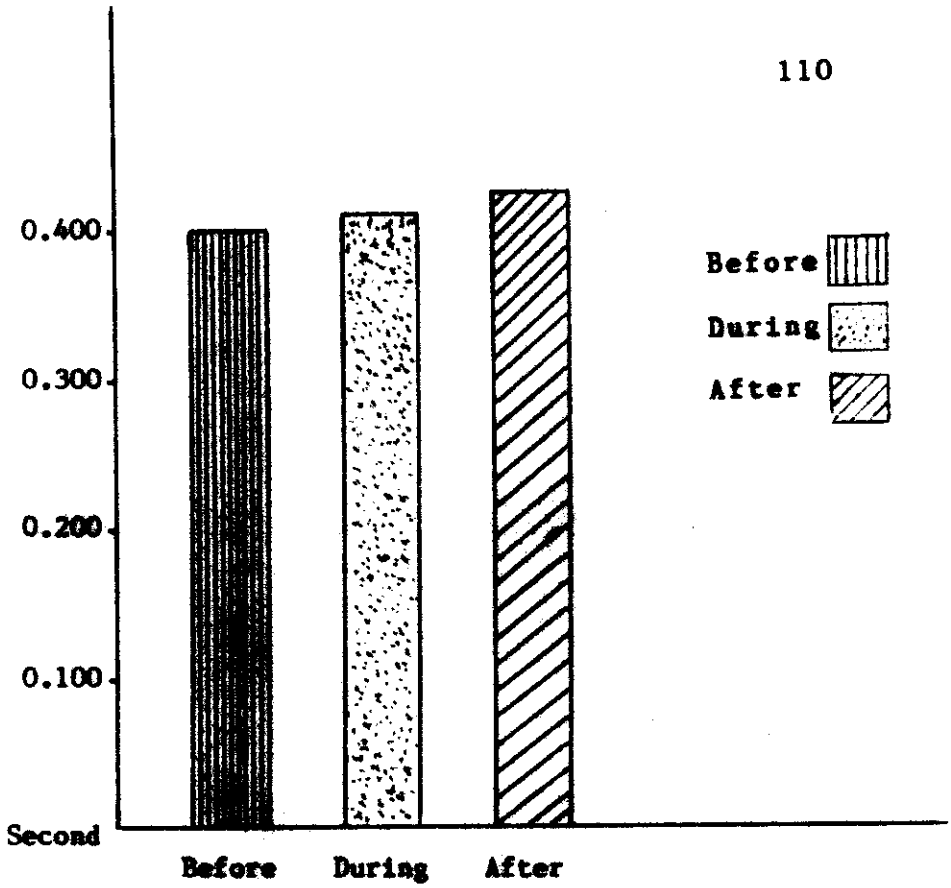
Patient's P - R interval before, during and after dialysis "Mean".

Figure(VII)



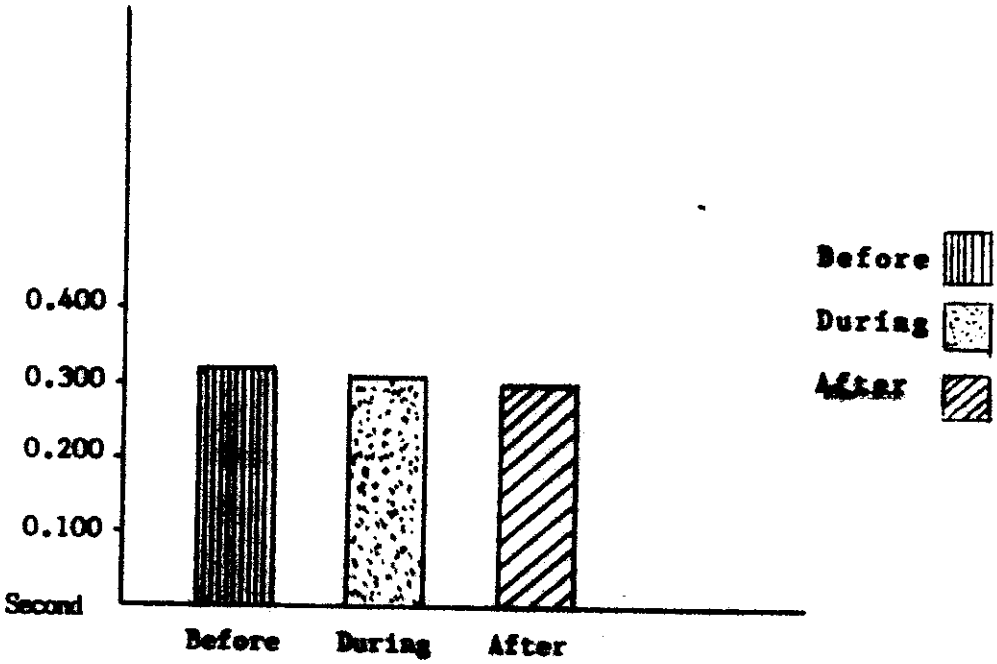
Patient's QRS duration before, during and after dialysis "Mean".

Figure (VIII)



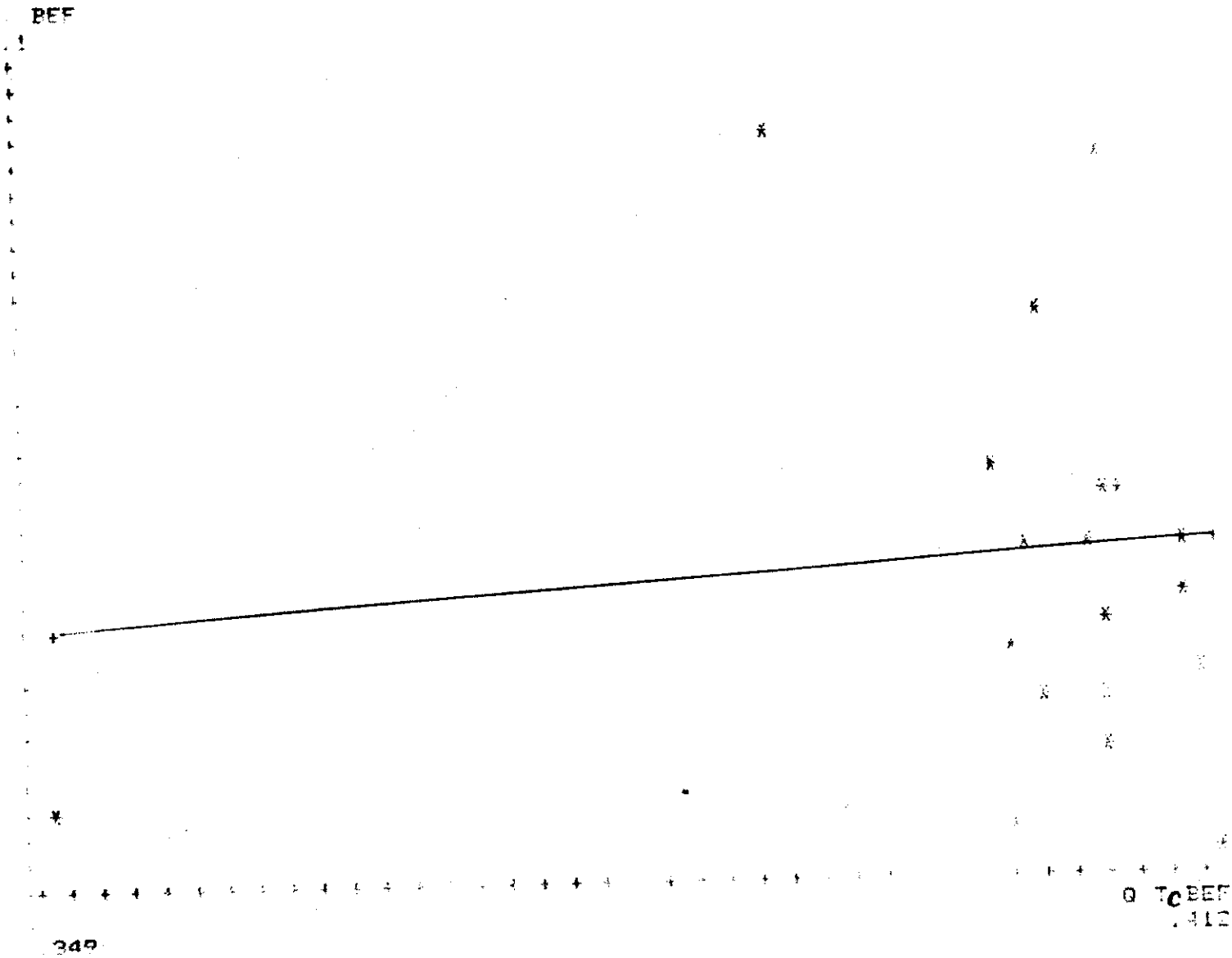
Patient's Q - Tc duration before, during and after dialysis "Mean".

Figure (IX)



Patient's S - T segment before, during and after dialysis "Mean".

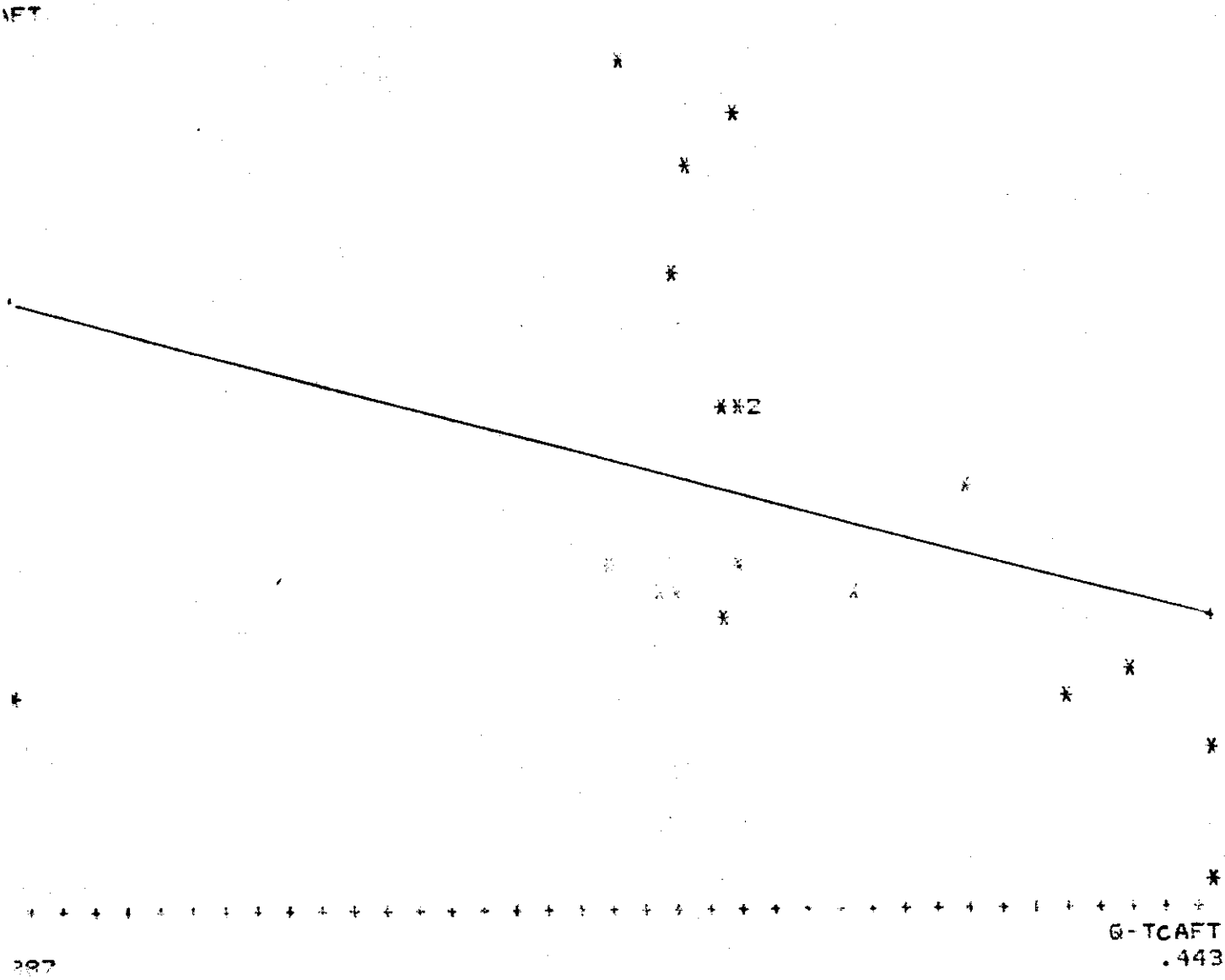
Figure (X)



Relation between serum creatinine in mg/100 ml and corrected Q-T interval in second before hemodialysis.

$r = 0.0751$ ($P > 0.05$).

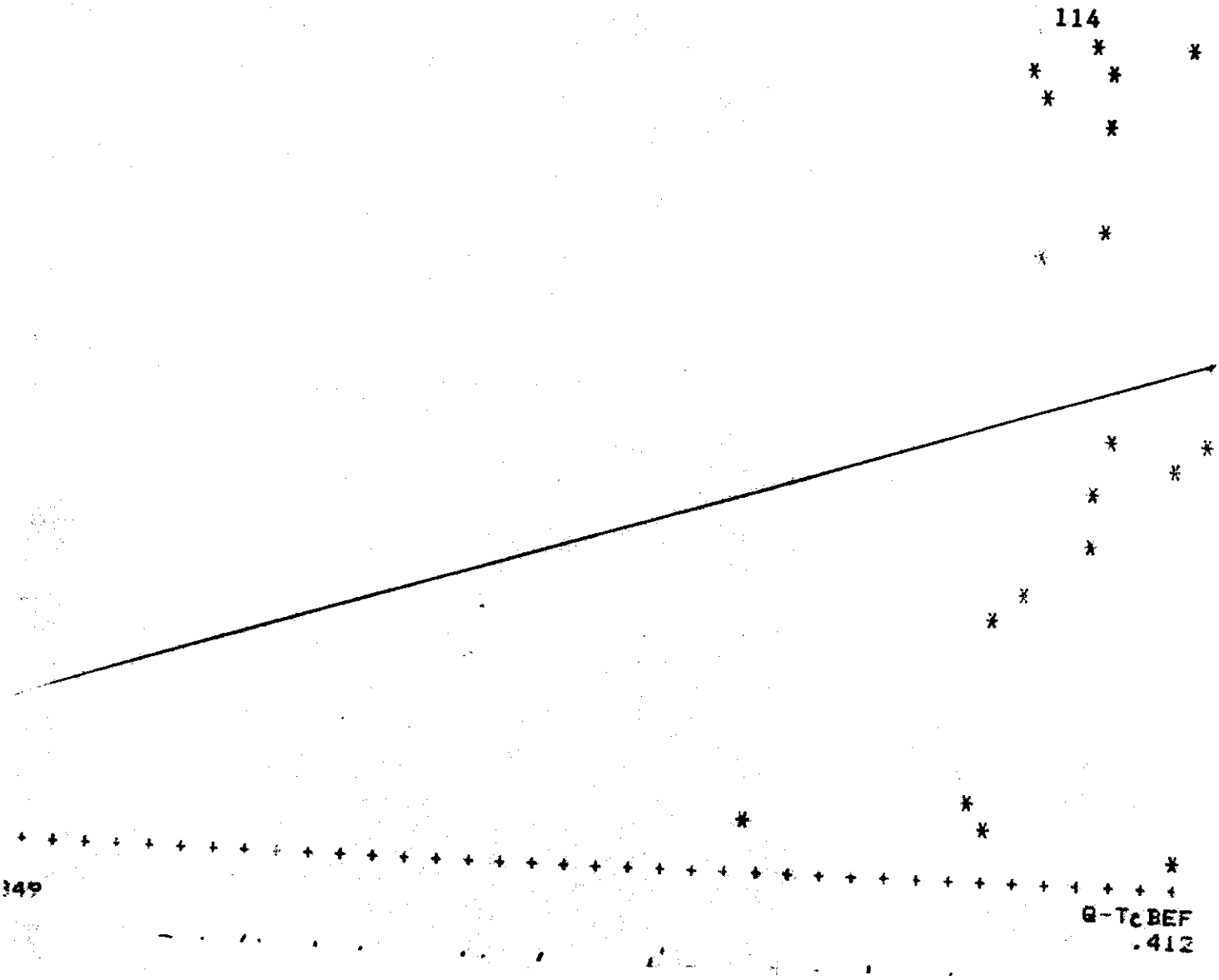
Figure XI



Relation between serum creatinine in mg/100 ml and corrected Q-T interval duration in second after hemodialysis.

r = 0.3218 (P > 0.05).

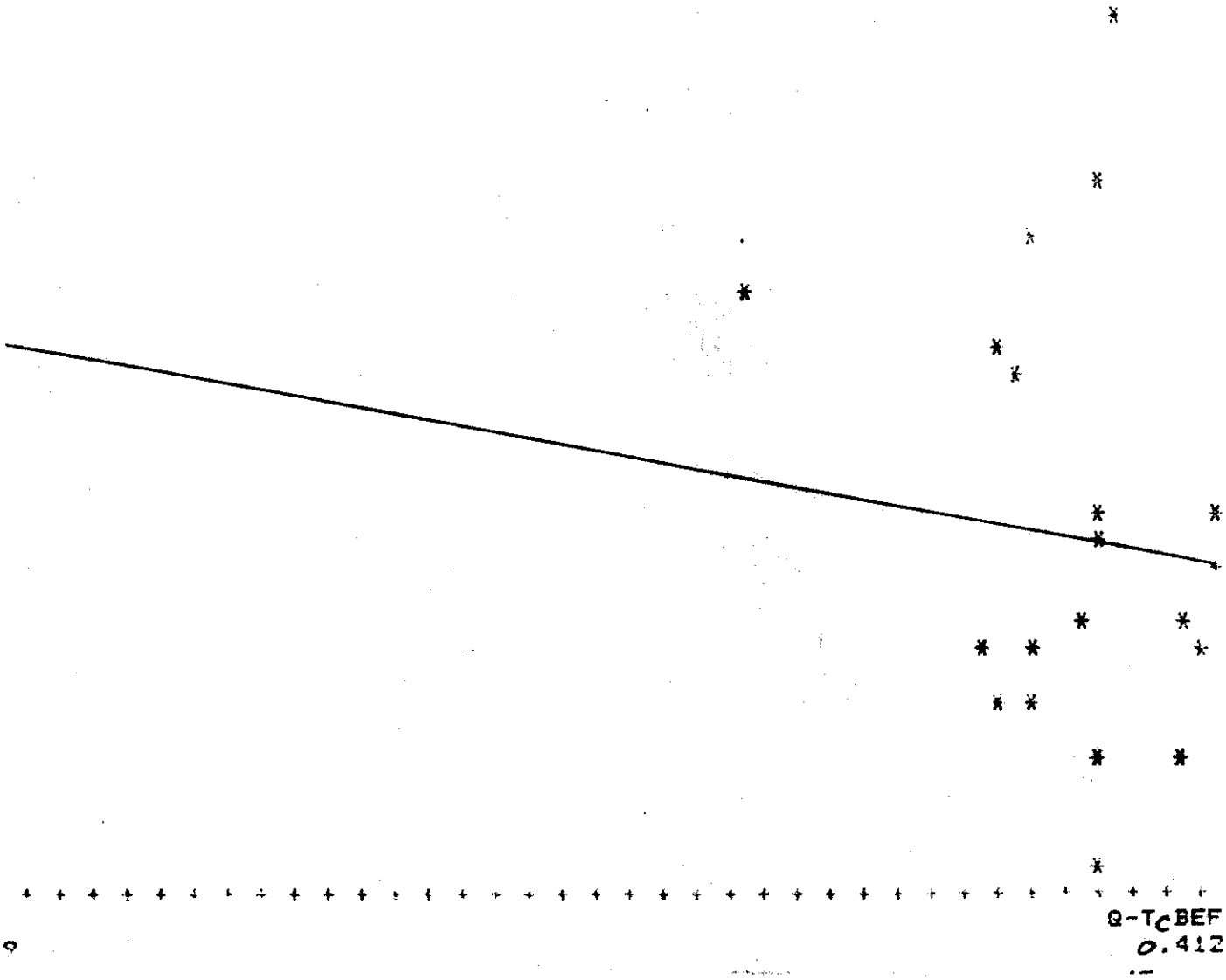
Figure XII



Relation between blood urea in mg/100 ml and corrected Q - T interval duration in second before hemodialysis

r = 0.2914 (P > 0.05).

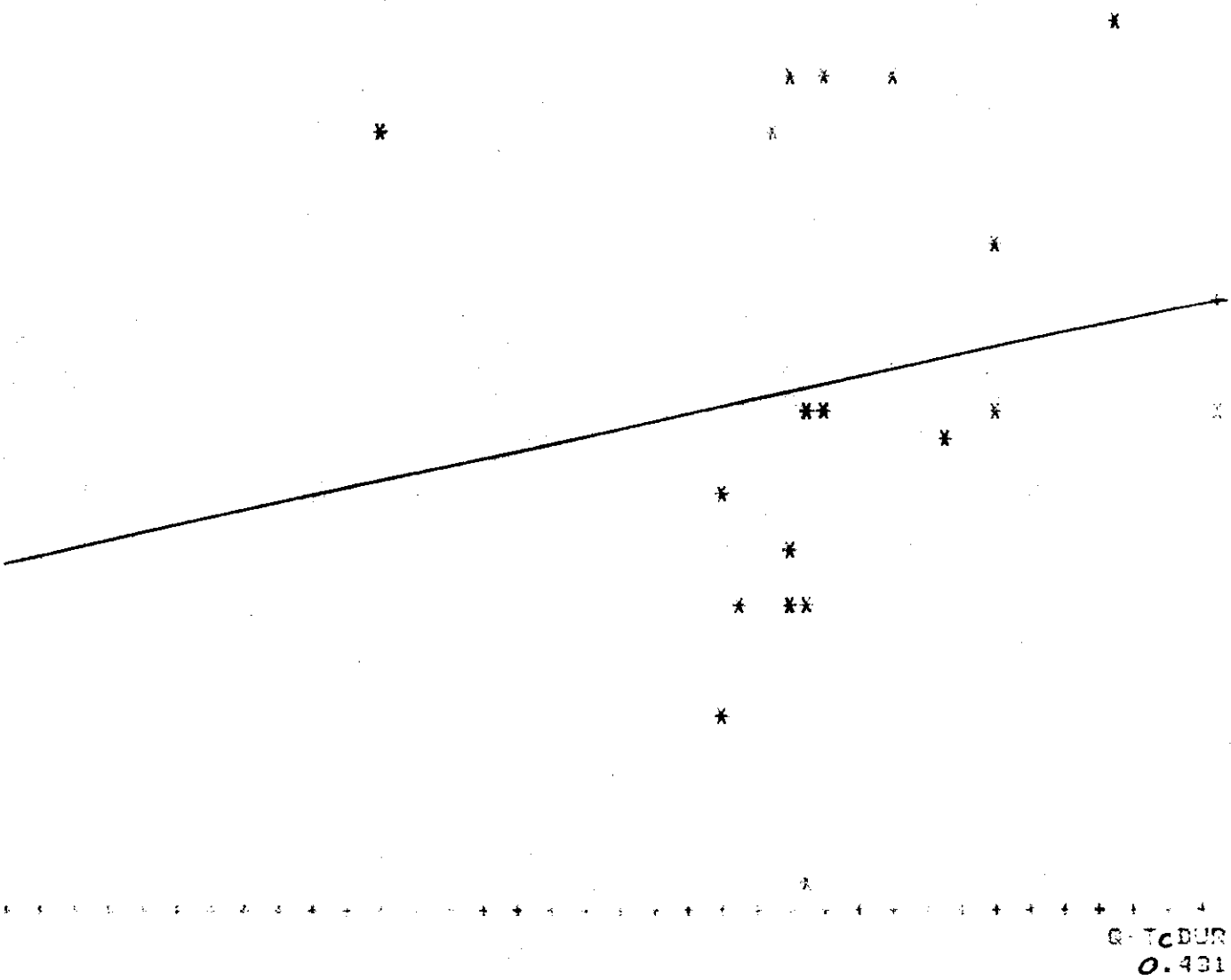
Figure XIII



Relation between serum potassium in mmol/l and corrected interval duration in second before hemodialysis

r = 0.2055 (P > 0.05).

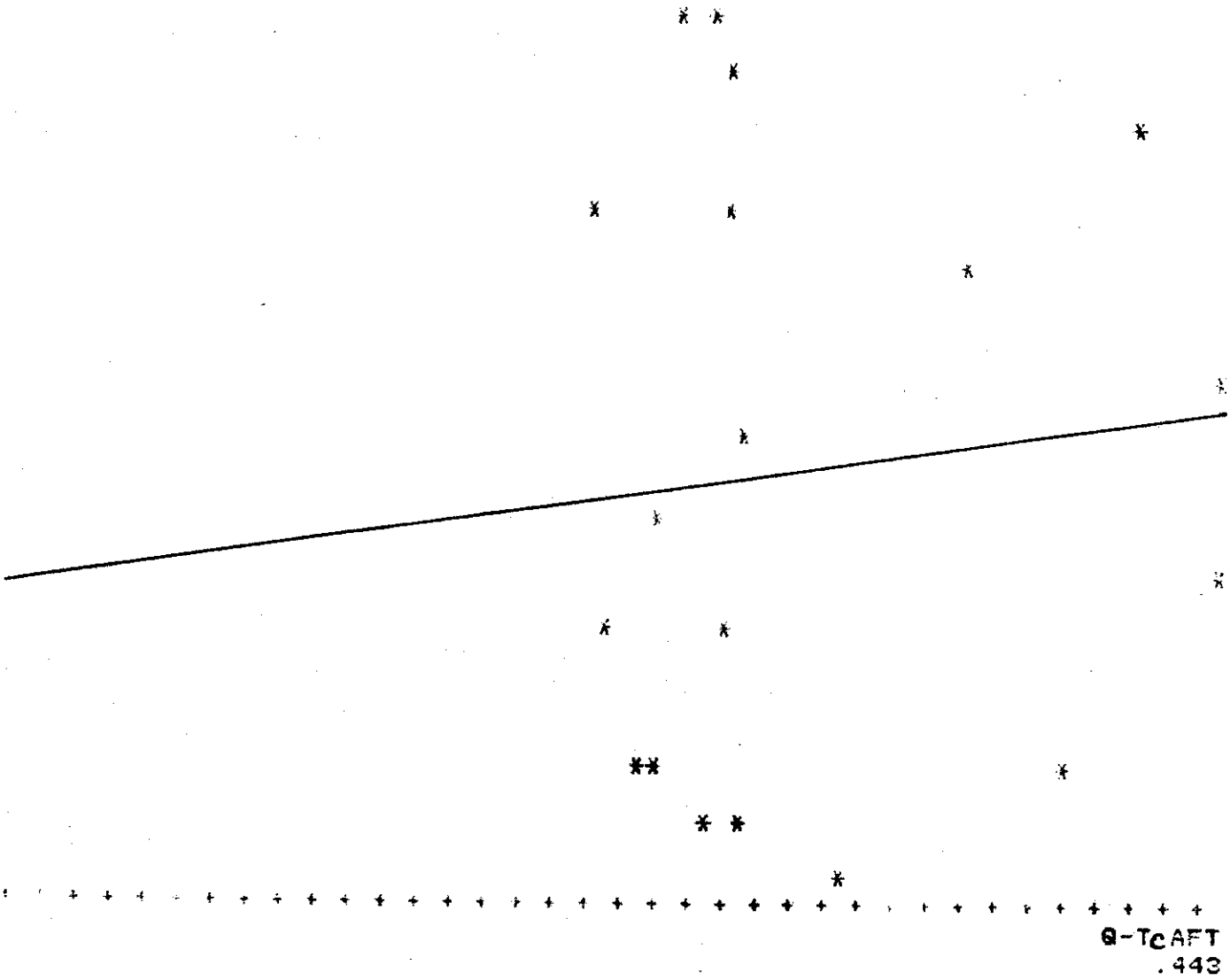
Figure XV



Relation between serum potassium in mmol/L and corrected Q - T interval duration in second during hemodialysis

r = 0.2276 (P > 0.05).

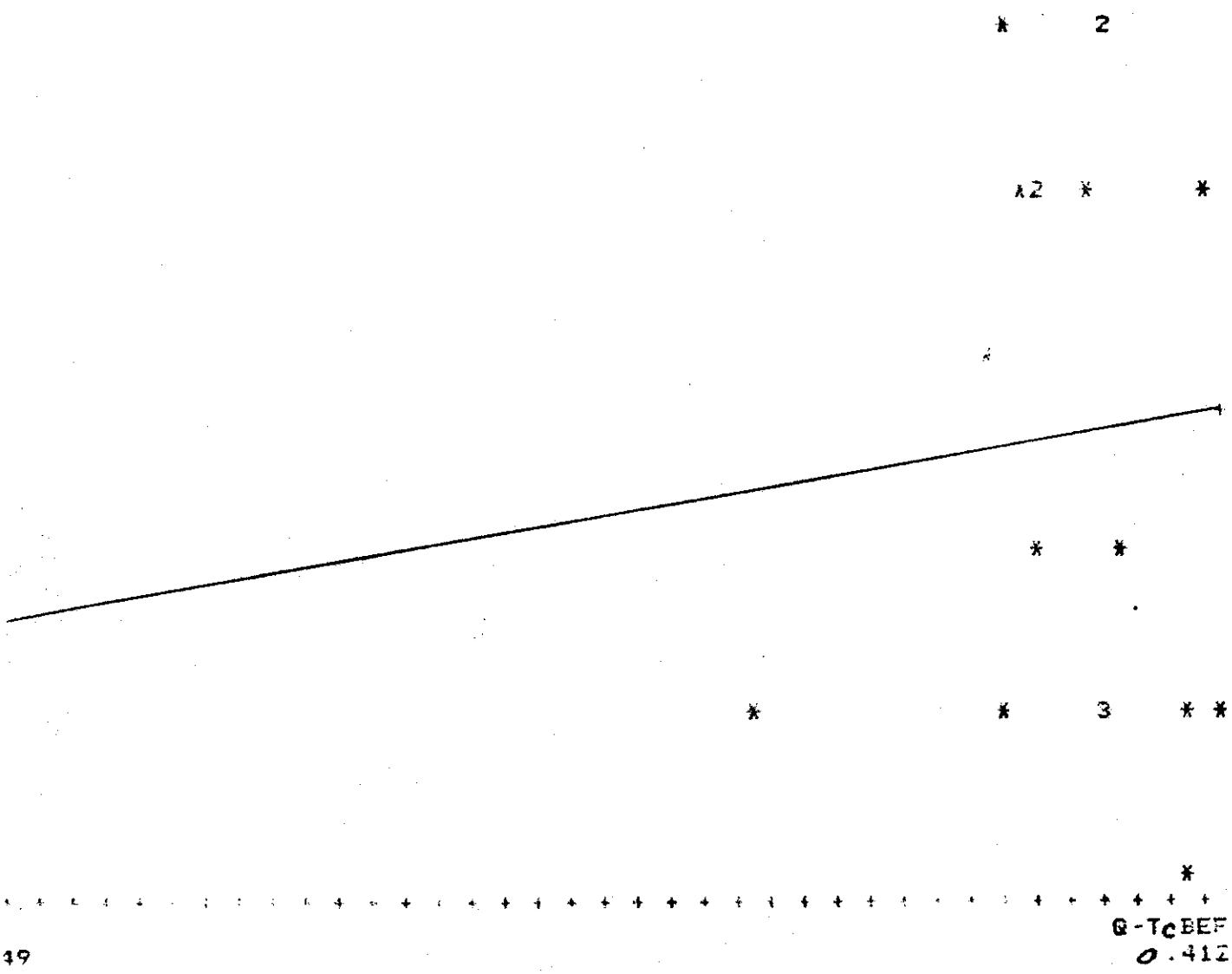
Figure XVI



Relation between serum potassium in mmol/L and corrected Q - T interval duration in second after hemodialysis.

r = 0.1379 (P > 0.05).

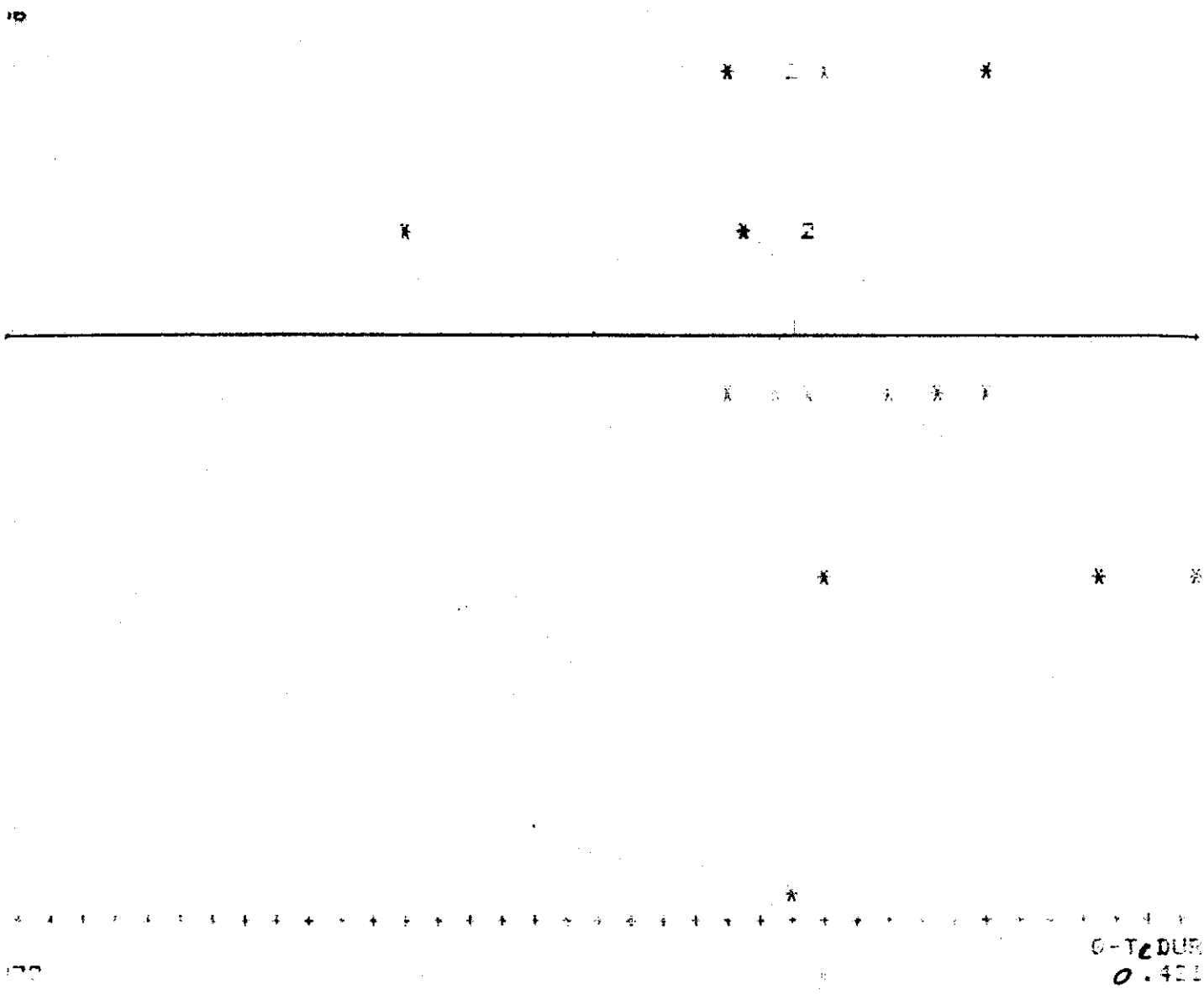
Figure XVII



Relation between serum sodium in mmol/L and corrected Q - T interval duration in second before hemodialysis

r = 0.1645 (P > 0.05).

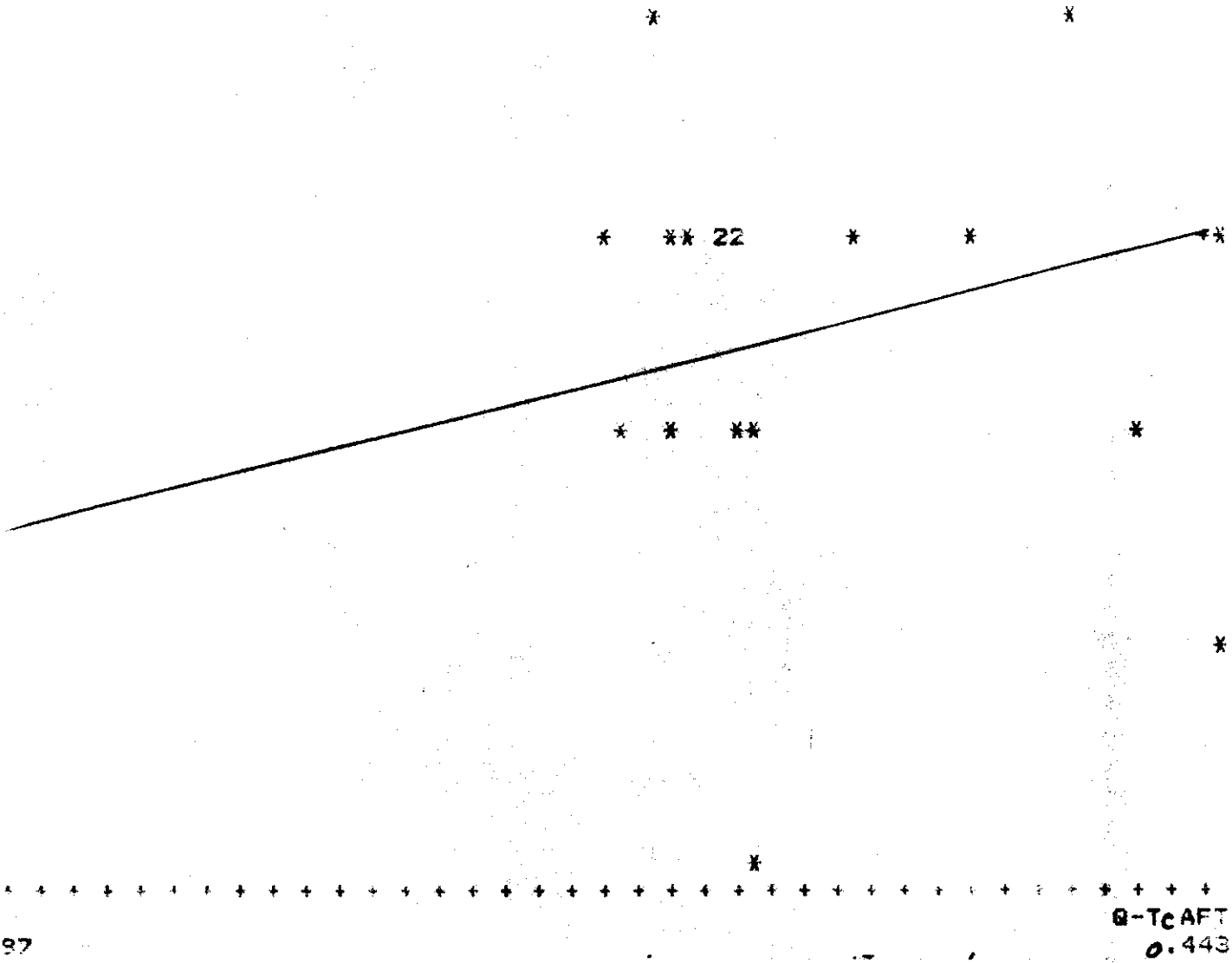
Figure XVIII



Relation between serum sodium in mmol/L and corrected Q - T interval duration in second during hemodialysis.

r = 0.0047 (P > .05).

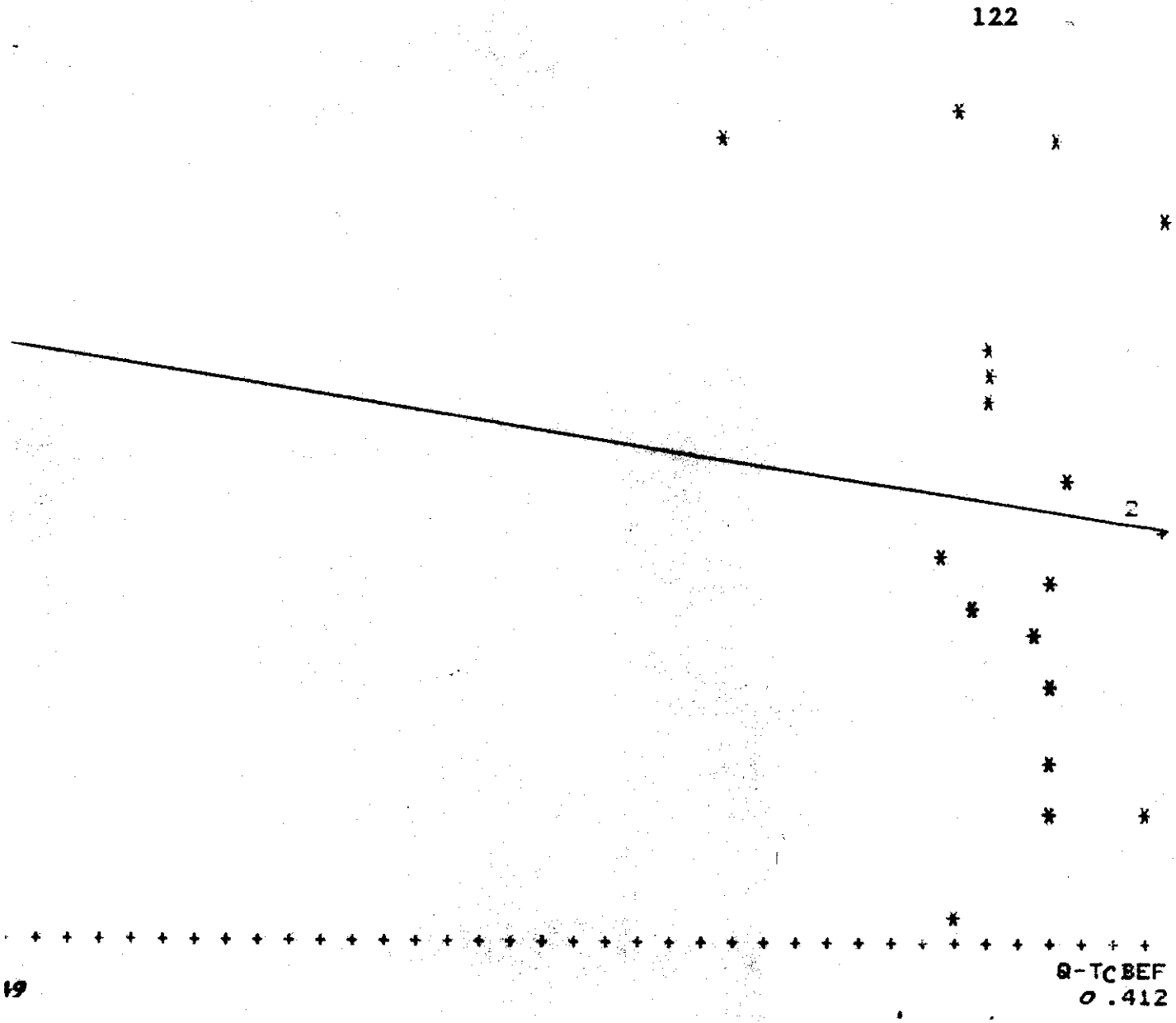
Figure XIX



Relation between serum sodium in mmol/L and corrected Q - T interval duration in second after hemodialysis

r = 0.2921 (P > 0.05).

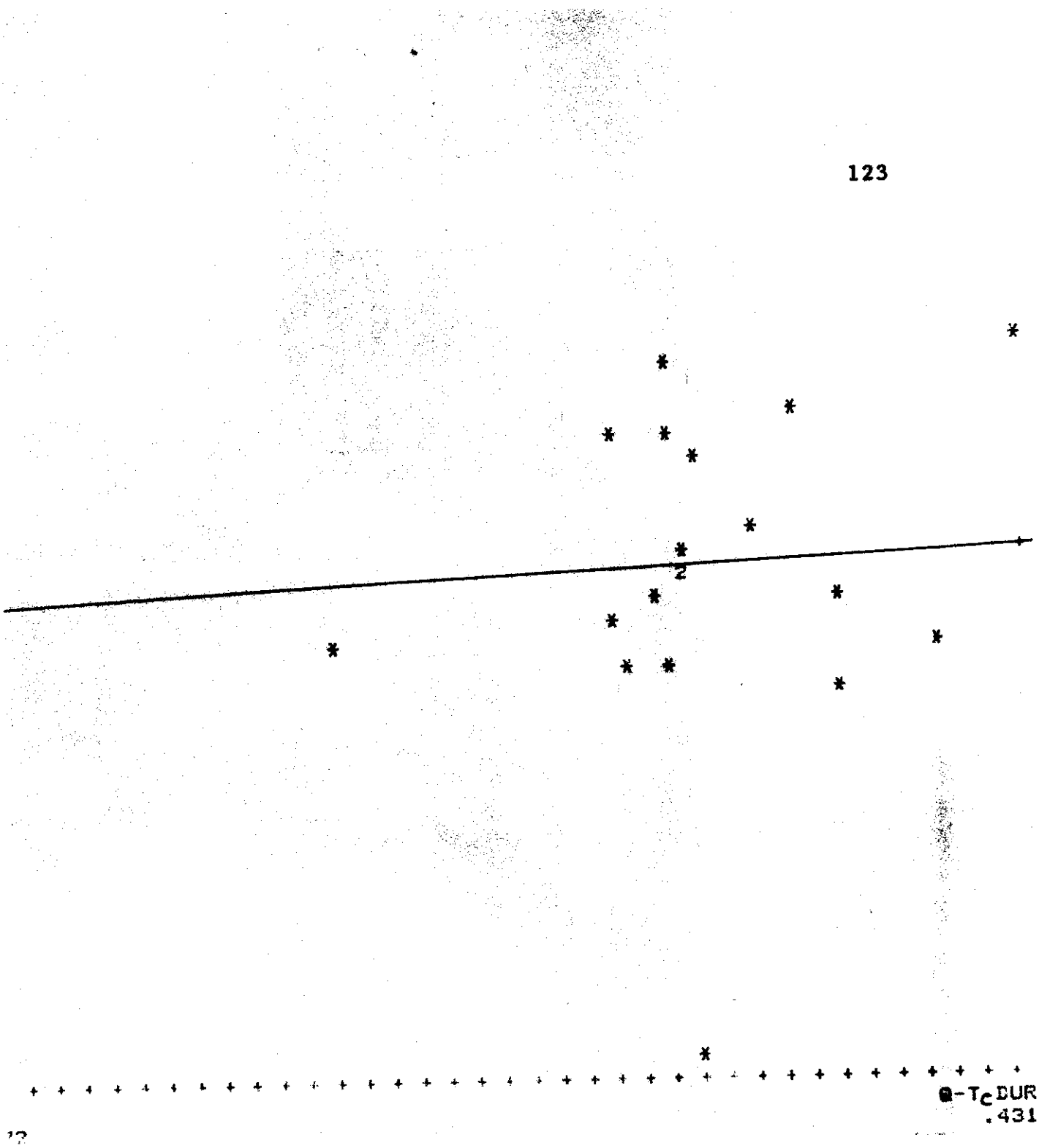
Figure XX



Relation between serum calcium in mg/100 ml and corrected Q - T interval duration in second before hemodialysis

r= 0.1801 (P > 0.05).

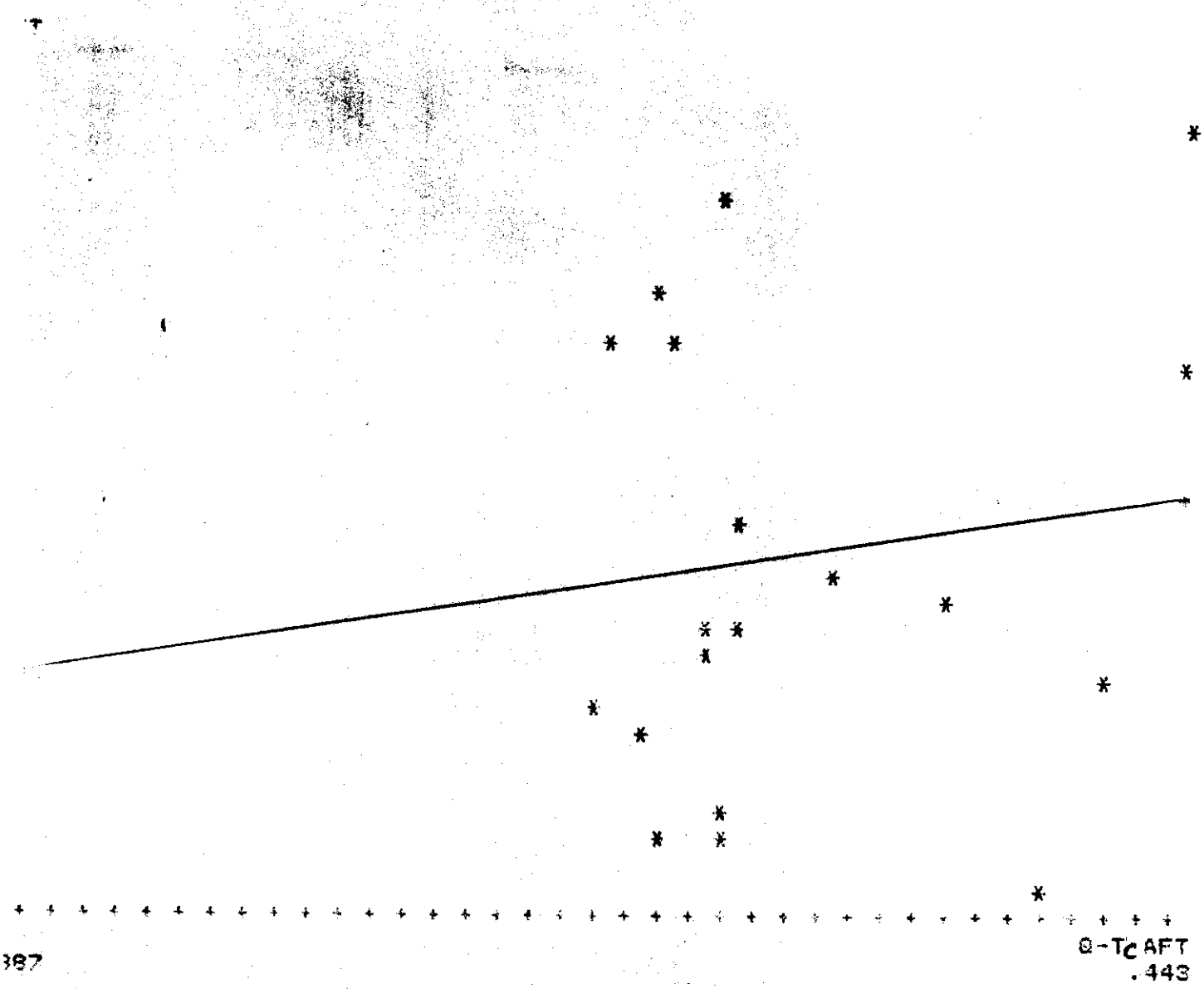
Figure XXI



Relation between serum calcium in mg/100 ml
and corrected Q - T interval duration
in second during hemodialysis

r = 0.0641 (P > 0.05).

Figure XXII



Relation between serum calcium in mg/100 ml and corrected Q - T interval duration in second after hemodialysis

r = 0.1862 (P > 0.05).

Figure XXIII