

RESULTS.

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I. Hormones and Immunoglobulins in all patients compared with control :

1. Cortisol :

Table (1) and Fig.(1) shows cortisol basal morning and afternoon levels both in control and allergic patients. The mean 8 a.m. cortisol level in the 17 controls was 12.806 ± 4.10 ug/dl, the mean 5 p.m. cortisol level was 4.213 ± 2.38 ug/dl. In the allergic patients group (20 cases), the mean 8 a.m. cortisol level was 13.650 ± 9.580 ug/dl, the mean 5 p.m. level was 8.070 ± 5.880 ug/dl. Cortisol diurnal variation is present in control group and still preserved in allergic group. Allergic patients cortisol levels in morning samples are not significantly different than corresponding levels in controls, however, evening samples are significantly higher.

2. T₃ :

Tables (2), (3) and Fig. (2) shows T₃ morning and afternoon levels both in control and allergic patients. The mean 8 a.m. T₃ level in controls (16) was 130.310 ± 16.480 ng/dl, the mean 5 p.m. T₃ levels was 120.810 ± 14.190 ng/dl. In allergic group (20 cases), the mean

8 a.m. T_3 level was 150.400 ± 48.360 ng/dl and mean 5 p.m. level was 162.750 ± 52.100 ng/dl.

In control group T_3 afternoon samples were significantly lower than morning samples and a significant diurnal variation present. The diurnal variation, however, is absent in patient group as the afternoon T_3 level significantly elevated than the control group. The change in patients' T_3 morning samples are non significant.

3. T_4 :

Tables (2), (3) and Fig. (3) shows T_4 morning and afternoon levels in both control and allergic patients. The mean 8 a.m. T_4 level in controls (16) was 9.690 ± 2.290 ug/dl, the mean 5 p.m. T_4 level (15 cases) was 8.750 ± 2.160 ug/dl. Mean T_4 level in allergic patients group (20) at 8 a.m. was 8.390 ± 2.060 ug/dl, and at 5 a.m. was 9.500 ± 1.810 ug/dl. Significant diurnal variation in the control T_4 levels is present. In the allergic patient group the diurnal variation is also significantly present but as the evening levels are elevated it is reversed. Allergic patients T_4 levels both in morning and afternoon are non significantly different if compared to controls.

4. TSH :

Tables (2), (3) and Fig. (4) shows TSH morning and afternoon levels both in control and allergic patients. The mean 8 a.m. TSH level in controls (16) was 1.190 ± 0.590 uIU/ml and at 5 p.m. was 1.320 ± 0.910 uIU/ml. The allergic patient group (20) mean 8 a.m. TSH level was 1.730 ± 0.920 uIU/ml and at 5 p.m. was 1.890 ± 0.830 uIU/ml.

No significant TSH diurnal variation was observed in both control and patient groups. TSH morning mean level in allergic patients was significantly higher than control group, the change in afternoon level was, however, non significant.

5. IgA, IgM, IgG :

Tables (4), (5), (6) and Fig. (5) show the IgA, IgM, IgG levels both in controls and patients. The IgA mean level in controls (15) was 139.670 ± 43.71 IU/ml, and in allergic patients (19) was 142.260 ± 65.200 IU/ml, IgM mean level in controls (15) was 163.470 ± 90.560 IU/ml and in allergic patients (18) was 214.780 ± 63.780 IU/ml. The IgG mean level in control group was 205.070 ± 43.000 IU/ml while in allergic patients group was 229.150 ± 48.950 IU/ml. The IgA, IgM and IgG mean levels were not significantly different in both control and allergic patients.

6. IgE :

Table (7) and Fig. (6) show IgE level in both control and allergic patients. The mean IgE level in controls (16) was 157.130 ± 76.160 IU/ml, and in allergic patients was 995.500 ± 1061.800 IU/ml.

The increase in IgE level in allergic patients was significantly higher compared to the control group.

II. Results in allergic patients with and without polypi:

1. Cortisol :

Table (8) and Fig. (7) show cortisol basal and afternoon levels in allergic patients with and without polypi. The mean 8 a.m. cortisol level in allergic patients with nasal polypi (5) was 21.160 ± 16.160 ug/dl, at 5.p.m. was 12.620 ± 8.770 ug/dl. The allergic patients without polypi mean 8 a.m. cortisol level was 11.150 ± 4.350 ug/dl, and at 5 p.m. 6.550 ± 3.880 ug/dl.

In patients without polypi the diurnal variation was significant. The diurnal variation was lost in patients with polypi. No significant change in cortisol level was found between the patients with and without polypi either in the morning or afternoon samples.

2. T₃ :

Table (9) and Fig. (8) show T₃ morning and afternoon levels in allergic patients with and without polypi. The mean 8 a.m. T₃ level in allergic patients with nasal polypi (5) was 167.000 ± 65.34 ng/dl and at 5 p.m. 194.000 ± 41.140 ng/dl. The mean T₃ level in allergic patients without nasal polypi (15) at 8 a.m. 144.870 ± 42.700 ng/dl and at 5 p.m. 152.330 ± 52.300 ng/dl. No significant diurnal variation in T₃ level was observed in both groups of patients with and without nasal polypi. The T₃ level was non significantly different in both morning and afternoon samples between patients with and without polypi.

3. T₄ :

Table (10) and Fig. (9) shows T₄ morning and afternoon levels in allergic patients with and without polypi. The mean 8 a.m. T₄ level in patients with polypi 8.900 ± 1.780 ug/dl and at 5 p.m. 10.520 ± 0.810 ug/dl. On the other hand the 8 a.m. mean T₄ level in patients without nasal polypi was 8.220 ± 2.170 ug/dl and at 5 p.m. was 9.160 ± 1.940 ug/dl.

No diurnal variation was observed both in patients with and without nasal polypi. In the allergic patients with nasal polypi evening T₄ level was significantly higher

than the T_4 level evening samples of the patients without nasal polypi. The morning samples were, however, non significantly different.

4. TSH :

Table (11) and Fig. (10) shows mean TSH level in the morning and afternoon of the patients with and without nasal polypi. The mean 8 a.m. TSH level in patients with nasal polypi was 1.980 ± 1.100 uIU/ml and at 5 p.m. was 1.900 ± 0.700 uIU/ml. Cases without nasal polypi TSH mean level at 8 a.m. was 1.650 ± 0.880 uIU/ml and at 5 p.m. 1.890 ± 0.890 uIU/ml. In both groups of patients no significant diurnal variation was detected and no significant change in TSH levels in morning and evening samples.

5. IgA, IgM, IgG, and IgE :

Table (12), (13), (14), (15) and Fig. (11), (12) show IgA, IgM, IgG and IgE levels of the allergic patients with and without nasal polypi. The mean level in patients with nasal polypi was for IgA 120.750 ± 38.060 IU/ml for IgM 206.200 ± 56.500 IU/ml, for IgG 255.800 ± 44.950 IU/ml and for IgE 890.000 ± 809.440 IU/ml. The mean level in patients without nasal polypi was for IgA 148.000 ± 70.620 IU/ml, for IgM 218.310 ± 68.270 IU/ml, for IgG 218.930 ± 47.190 IU/ml and for IgE

1030.670 $\pm$ 1156.560 IU/ml. The IgA, IgM, IgG and IgE levels were not significantly different in both patients with and without nasal polypi.

III. Nasal smear for eosinophilia

In all control subjects showed 5% nasal eosinophils. In cases of allergic groups the following were detected :-

3 cases out of total 20 were presented with $< 10\%$ nasal eosinophils, 7 with $< 50\%$ and 10 with $> 50\%$ eosinophils.

TABLE (1) : Serum Cortisol levels in controls and allergic patients, $\mu\text{g/dl}$

NO.	Cortisol in controls		NO.	Cortisol in patients	
	5 p.m.	8 a.m.		5 p.m.	8 a.m.
1	8.5	10.5	1	5.0	16.0
2	2.9	15.0	2	6.4	10.0
3	3.1	11.8	3	9.2	16.0
4	4.6	14.0	4	8.5	14.5
5	3.3	12.5	5	7.2	16.4
6	3.5	14.5	6	5.0	9.6
7	3.2	11.8	7	10.5	17.0
8	5.0	0.5	8	11.8	12.5
9	6.1	22.0	9	8.5	11.8
10	1.9	5.5	10	3.4	7.2
11	3.2	15.0	11	2.4	19.5
12	4.2	17.0	12	28.0	50.0
13	3.1	14.5	13	1.1	6.8
14	2.9	6.1	14	4.6	7.6
15	1.4	8.0	15	8.8	9.2
16	10.5	13.0	16	10.0	18.5
17	-	-	17	6.1	8.5
			18	15.0	6.4
			19	8.5	9.6
			20	1.4	5.9
NO	16	16		20	20
Mean	4.213	12.606		8.070	13.650
S.D. +	2.380	4.100		5.880	9.580
S.E. +	0.590	1.026		1.310	2.140
P				<0.02	>0.6
t paired	8.1290			3.7831	
P'	<0.001			<0.005	

P = patients compared to control

P' = for diurnal variation.

TABLE (2) : Serum T_3 & T_4 levels & TSH activity
in control subjects.

NO	T_3 (ng/dl.)		T_4 (μ g/dl.)		TSH (μ IU/ml)	
	5 p.m	8 a.m.	5 p.m.	8 a.m.	5 p.m.	8 a.m.
1	130	145	10.0	11.8	1.5	1.3
2	125	140	9.5	9.5	1.0	1.4
3	110	135	8.4	9.0	0.3	1.1
4	130	140	14.0	15.0	1.0	1.0
5	93	95	5.6	5.8	2.4	2.5
6	125	130	7.2	7.8	0.35	0.9
7	145	150	9.0	10.0	1.5	1.1
8	105	105	7.8	7.2		
9	135	135		11.8	0.7	0.4
10	115	135	10.2	10.8	0.3	0.3
11	130	140	10.2	12.0	2.2	2.2
12	95	100	5.0	7.8	0.35	1.7
13	130	120	7.8	7.8	2.5	1.1
14	125	140	7.5	9.0	1.2	1.4
15	120	135	9.0	9.0	2.0	1.3
16	120	140	10.0	10.8	0.6	0.8
17	-	-	-	-	-	-
NO	16	16	15	16	16	16
Mean	120.810	130.310	8.750	9.690	1.320	1.190
S.D.+	14.190	16.480	2.160	2.290	0.910	0.590
S.E.+	3.550	4.120	0.560	0.570	0.230	0.150
t paired	4.1461		3.2140		3.5529	
P	< 0.001		< 0.01		> 0.6	

TABLE (3) : Serum T_3 & T_4 levels & TSH activity
in allergic patients.

NO	T_3 (ng/dl.)		T_4 (ug/dl.)		TSH (uIU/ml)	
	5 p.m	8 a.m.	5 p.m.	8 a.m.	5 p.m.	8 a.m.
1	170	145	10.5	8.5	2.2	1.8
2	120	125	9.0	9.8	1.0	1.2
3	160	170	8.2	10.2	1.8	0.75
4	130	260	12.0	10.2	0.3	1.7
5	310	135	12.0	5.9	2.3	0.4
6	130	135	8.8	7.3	2.4	0.9
7	180	150	10.0	7.8	2.8	2.5
8	115	110	13.0	11.0	1.1	0.9
9	175	150	10.8	10.8	1.4	0.8
10	140	145	9.0	9.0	2.7	2.0
11	150	140	7.5	9.0	3.0	3.8
12	250	280	9.8	10.0	1.1	1.7
13	190	170	7.8	8.5	1.4	1.2
14	100	105	7.5	4.6	3.6	1.8
15	135	135	7.2	3.5	1.5	1.7
16	220	110	11.8	9.5	2.4	1.3
17	145	145	10.2	6.4	1.8	3.6
18	130	110	7.5	8.4	2.0	1.4
19	200	200	10.2	10.2	2.2	3.0
20	105	88	7.2	7.2	0.8	2.2
NO	20	20	20	20	20	20
Mean	162.750	150.400	9.500	8.390	1.890	1.730
S.D.+	52.100	48.360	1.810	2.060	0.830	0.920
S.E.+	11.650	10.810	0.400	0.460	0.180	0.210
t paired	0.9744		2.4048		0.6647	
P	> 0.3		< 0.05		> 0.60	

TABLE (4) : Serum IgA levels in control subjects
and allergic patients

NO	Control group	NO	Patients group
1	143	1	125
2	113	2	289
3	102	3	56
4	183	4	91
5	-	5	226
6	113	6	60
7	75	7	70
8	176	8	183
9	102	9	150
10	-	10	234
11	137	11	113
12	137	12	113
13	204	13	107
14	113	14	241
15	234	15	137
16	107	16	150
17	156	17	-
		18	143
		19	96
		20	119
NO	15		19
Mean	139.670		142.260
S.D. $\pm$	43.710		65.200
S.E. $\pm$	11.290		14.960
P			> 0.2

TABLE (5) : Serum IgM levels in control subjects
and allergic patients

NO	Control group	NO	Patients group
1	118	1	167
2	158	2	311
3	259	3	167
4	187	4	256
5	-	5	378
6	44	6	230
7	249	7	259
8	119	8	142
9	158	9	184
10	-	10	152
11	390	11	226
12	68	12	230
13	193	13	153
14	68	14	202
15	184	15	221
16	73	16	240
17	184	17	118
		18	-
		19	-
		20	230
NO	15		18
Mean	163.470		214.780
S.D. $\pm$	90.560		63.780
S.E. $\pm$	23.380		15.030
P			> 0.1

TABLE (6) : Serum IgG levels in control subjects
and allergic patients

NO	Control group	NO	Patients group
1	-	1	203
2	203	2	260
3	219	3	195
4	243	4	187
5	203	5	278
6	180	6	211
7	151	7	211
8	172	8	219
9	278	9	333
10	-	10	252
11	-	11	252
12	235	12	252
13	192	13	144
14	158	14	260
15	158	15	195
16	287	16	243
17	187	17	260
		18	165
		19	158
		20	305
NO	14		20
Mean	205.070		229.150
S.D. $\pm$	43.000		48.950
S.E. $\pm$	11.490		10.940
P			> 0.2

TABLE (7) : Serum IgE levels in control subjects
and allergic patients

NO	Control group	NO	Patients group
1	200	1	275
2	135	2	1100
3	120	3	130
4	65	4	225
5	160	5	425
6	300	6	1625
7	175	7	75
8	70	8	1650
9	110	9	1150
10	49	10	140
11	140	11	550
12	260	12	375
13	275	13	425
14	190	14	3500
15	80	15	3500
16	185	16	2150
17	-	17	700
		18	175
		19	90
		20	1650
NO	16		20
Mean	157.130		995.500
S.D. $\pm$	76.160		1061.800
S.E. $\pm$	19.040		237.400
P			$< 0.005^{**}$

TABLE (8): Serum cortisol levels in allergic rhinitis patients with or without nasal polypi, $\mu\text{g/dl}$.

Serial NO	Pts. NO	With nasal polypi.		Pts. NO	Without nasal polypi.	
		5 p.m.	8 a.m.		5. p.m.	8 a.m.
1	9	8.5	11.8	1	5.0	16.0
2	7	10.5	17.0	2	6.4	10.0
3	12	28.0	50.0	3	9.2	16.0
4	16	10.0	18.5	4	8.5	14.5
5	17	6.1	8.5	5	7.2	16.4
6				6	5.0	9.6
7				8	11.8	12.5
8				10	3.4	7.2
9				11	2.4	19.5
10				13	1.1	6.8
11				14	4.6	7.6
12				15	8.8	9.2
13				18	15.0	6.4
14				19	8.5	9.6
15				20	1.4	5.9
NO		5	5		15	15
Mean		12.620	21.160		6.550	11.150
S.D. $\pm$		8.770	16.610		8.880	4.350
S.E. $\pm$		3.920	7.430		1.000	1.120
t paired		2.4131			3.1381	
P'		>0.1			<0.01	
P					> 0.2	> 0.2

P' = for diurnal variation.

P = without polypi compared to with polypi.

TABLE (9): Serum total T_3 in allergic rhinitis patients with or without nasal polypi, ng/dl.

Serial NO	Pts. NO	With nasal polypi.		Pts. NO	Without nasal polypi.	
		5 p.m.	8 a.m.		5. p.m.	8 a.m.
1	9	175	150	1	170	145
2	7	180	150	2	120	125
3	12	250	280	3	160	170
4	16	220	110	4	130	260
5	17	145	145	5	310	135
6				6	130	135
7				8	115	110
8				10	140	145
9				11	150	140
10				13	190	170
11				14	100	105
12				15	135	135
13				18	130	110
14				19	200	200
15				20	105	88
NO		5	5		15	15
Mean		194.00	167.00		152.33	144.87
S.D.+		41.14	65.34		52.30	42.70
S.E.+		18.40	29.22		13.50	11.02
t paired			1.1576			0.4902
P ¹			> 0.4			> 0.7
P					> 0.1	> 0.5

P¹ : for diurnal variation.

P : without polypi compared to with polypi.

TABLE (10): Serum Total T_4 in allergic rhinitis patients
with or without nasal polypi, $\mu\text{g/dl}$.

Serial NO	Pts. NO	With nasal polypi.		Pts. NO	Without nasal polypi.	
		5 p.m.	8 a.m.		5. p.m.	8 a.m.
1	9	10.8	10.8	1	10.5	8.5
2	7	10.0	7.8	2	9.0	9.8
3	12	9.8	10.0	3	8.2	10.2
4	16	11.8	9.5	4	12.0	10.2
5	17	10.2	6.4	5	12.0	5.9
6				6	8.8	7.3
7				8	13.0	11.0
8				10	9.0	9.0
9				11	7.5	9.0
10				13	7.8	8.5
11				14	7.5	4.6
12				15	7.2	3.5
13				18	7.5	8.4
14				19	10.2	10.2
15				20	7.2	7.2
NO		5	5		15	15
Mean		10.520	8.900		9.160	8.220
S.D. $\pm$		0.810	1.780		1.940	2.170
S.E. $\pm$		0.360	2.240		0.500	0.560
t paired			2.1375			1.6551
$P^{\vee}$			> 0.2			> 0.2
P					< 0.05	> 0.8

$P^{\vee}$: for diurnal variation.

P : without polypi compared to with polypi.

TABLE (11): Serum TSH levels in allergic rhinitis patients with or without nasal polypi, μ IU/ml.

Serial NO	Pts. NO	With nasal polypi.		Pts. NO	Without nasal polypi.	
		5 p.m.	8 a.m.		5. p.m.	8 a.m.
1	9	1.4	0.8	1	2.2	1.8
2	7	2.8	2.5	2	1.0	1.2
3	12	1.1	2.7	3	1.8	0.75
4	16	2.4	1.3	4	0.3	1.7
5	17	1.8	3.6	5	2.3	0.4
6				6	2.4	0.9
7				8	1.1	0.9
8				10	2.7	2.0
9				11	3.0	3.8
10				13	1.4	1.2
11				14	3.6	1.8
12				15	1.5	1.7
13				18	2.0	1.4
14				19	2.2	3.0
15				20	0.8	2.2
NO		5	5		15	15
Mean		1.900	1.980		1.890	1.650
S.D. $\pm$		0.700	1.100		0.890	0.880
S.E. $\pm$		0.313	0.490		0.230	0.230
t paired			0.1565			0.8647
$\bar{P}$			> 0.9			> 0.4
P					> 0.9	> 0.6

$\bar{P}$: for diurnal variation.

P : without nasal polypi compared to with polypi.

TABLE : (12) : Serum IgA levels in allergic rhinitis patients with or without nasal polypi, IU/ml.

Serial NO.	Pts. NO.	With nasal polypi.	Pts. NO.	without nasal poypi.
1	9	150	1	125
2	7	70	2	289
3	12	113	3	56
4	16	150	4	91
5	17	-	5	226
6			6	60
7			8	183
8			10	234
9			11	113
10			13	107
11			14	241
12			15	137
13			18	143
14			19	96
15			20	119
NO		4		15
Mean		120.750		148.000
S.D. $\pm$		38.060		70.620
S.E. $\pm$		19.030		18.230
P				> 0.40

TABLE : (13) : Serum IgM levels in allergic rhinitis patients with or without nasal polypi, IU/ml.

Serial NO.	Pts. NO.	With nasal polypi.	Pts. NO.	without nasal poypi.
1	9	184	1	167
2	7	259	2	311
3	12	230	3	167
4	16	240	4	256
5	17	118	5	378
6			6	230
7			8	142
8			10	152
9			11	229
10			13	153
11			14	202
12			15	221
13			18	-
14			19	-
15			20	230
NO		5		13
Mean		206.200		218.310
S.D.+		56.500		68.270
S.E.+		25.270		18.930
P				> .80

TABLE : (14) : Serum IgG levels in allergic rhinitis patients with or without nasal polypi, IU/ml.

Serial NO.	Pts. NO.	With nasal polypi.	Pts. NO.	without nasal poypi.
1	9	333	1	203
2	7	211	2	260
3	12	252	3	195
4	16	243	4	187
5	17	260	5	278
6			6	211
7			8	219
8			10	252
9			11	252
10			13	144
11			14	260
12			15	195
13			18	165
14			19	158
15			20	305
NO		5		15
Mean		259.800		218.930
S.D. $\pm$		44.950		47.190
S.E. $\pm$		20.103		12.180
P				> 0.1

TABLE : (15) : Serum IgE levels in allergic rhinitis patients with or without nasal polypi, IU/ml.

Serial NO.	Pts. NO.	With nasal polypi.	Pts. NO.	without nasal poyypi.
1	9	1150	1	275
2	7	75	2	1100
3	12	375	3	130
4	16	2150	4	225
5	17	700	5	425
6			6	1625
7			8	1650
8			10	140
9			11	550
10			13	425
11			14	3500
12			15	3500
13			18	175
14			19	90
15			20	1650
NO		5		15
Mean		890.000		1030.670
S.D. $\pm$		809.440		1156.560
S.E. $\pm$		361.990		298.620
P				> 0.7

TABLE (16): Collective data showing serum T_3 and T_4 levels and TSH activity in allergic patients and controls.

	T_3 (ng/dl)				T_4 (μ g/dl)				TSH (μ IU/ml)			
	Control		Allergic patients		Control		Allergic patients		Control		Allergic patients	
	5 p.m.	8 a.m.	5 p.m.	8 a.m.	5 p.m.	8 a.m.	5 p.m.	8 a.m.	5 p.m.	8 a.m.	5 p.m.	8 a.m.
NO	16	16	20	20	16	16	20	20	16	16	20	20
Mean	120.81	130.31	162.75	150.40	8.75	9.69	0.50	8.39	1.32	1.19	1.89	1.73
S.D. $\pm$	14.19	16.48	52.10	48.36	2.16	2.29	1.81	2.06	0.91	0.59	0.83	0.92
S.E. $\pm$	3.55	4.12	11.65	10.81	0.56	0.57	0.40	0.46	0.23	0.15	0.18	0.21
P_1	<0.005											
P_2	>0.1											
P_3	>0.3											
P_4	>0.1								>0.05			
P_5												
P_6									<0.05			

P_1 = Comparing T_3 5.p.m. level to control.

P_3 = Comparing T_4 5 p.m. level to control.

P_5 = Comparing TSH 5 p.m. level to control.

P_2 = Comparing T_3 8 a.m. level to control.

P_4 = Comparing T_4 8.a.m. level to control.

P_6 = Comparing TSH 8 a.m. level to control.

Fig.(1) : Serum cortisol level in controls and allergic patients, mean $\pm$ S.E. (μ g./dl.).

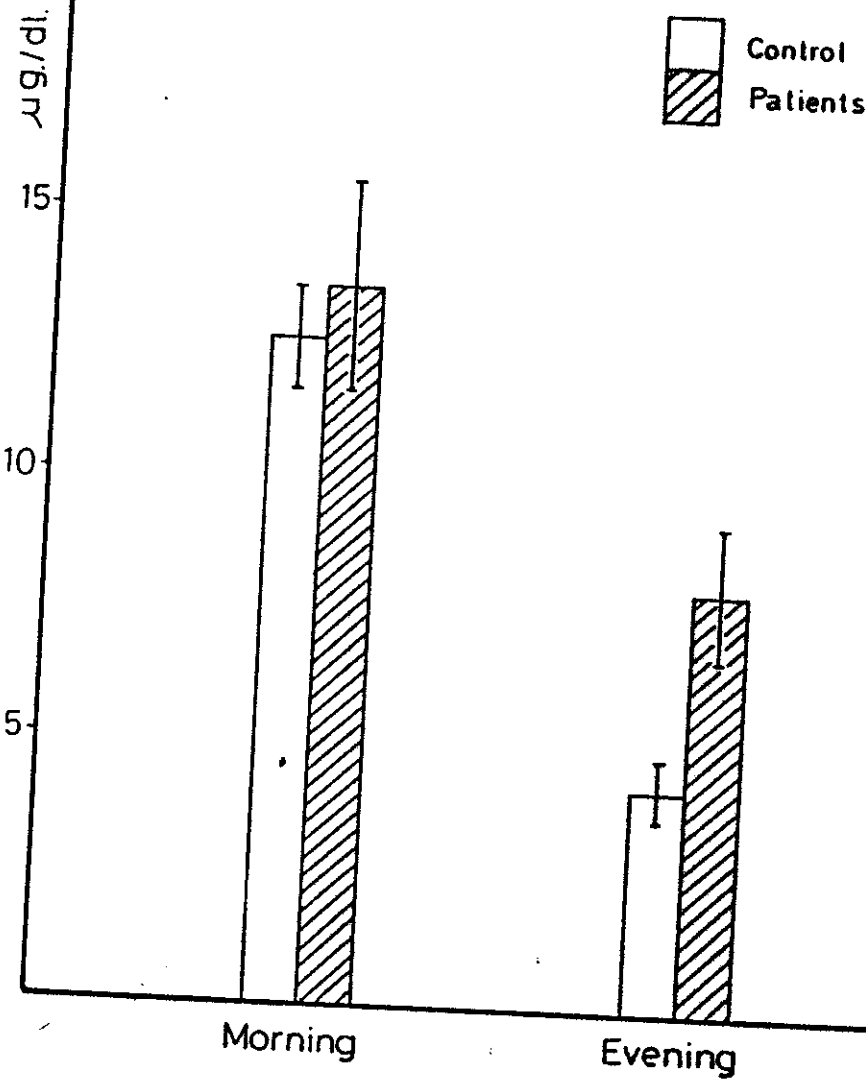
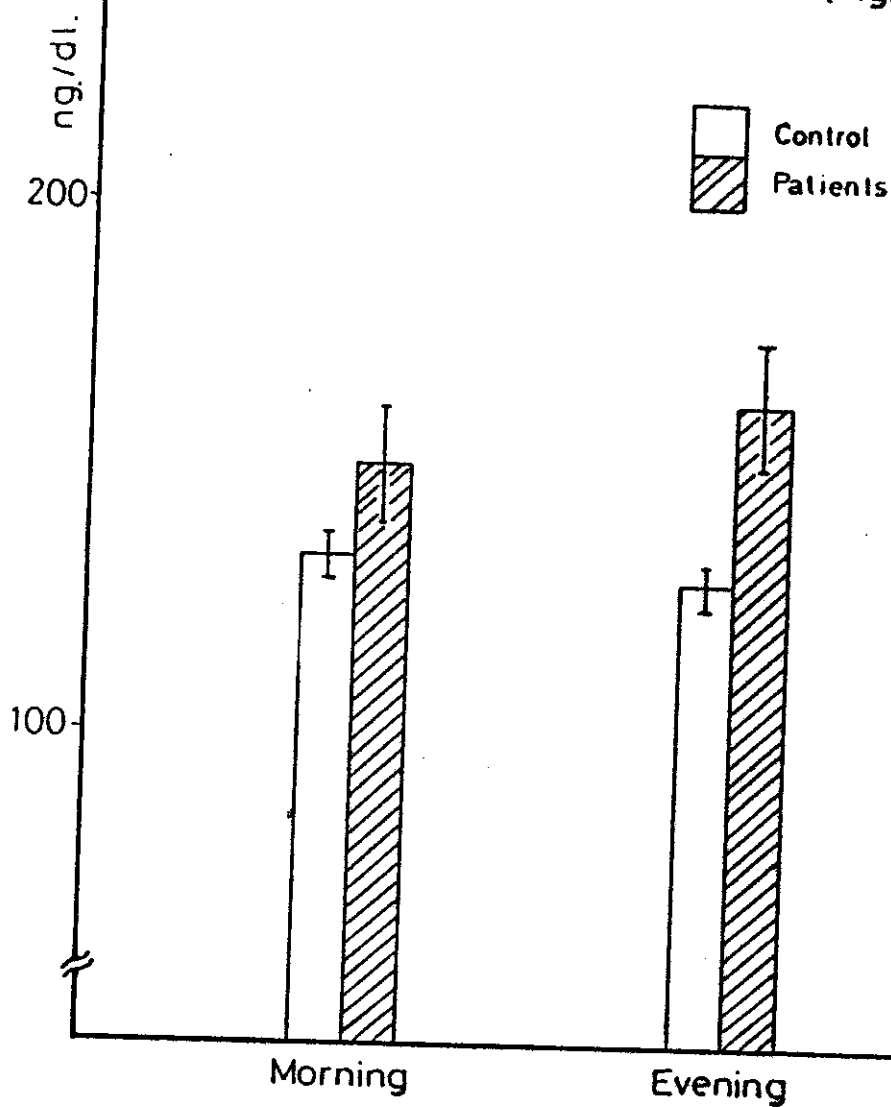


Fig.(2): Serum total T_3 level in control and allergic patients , mean $\pm$ S.E.(ng./dl.).



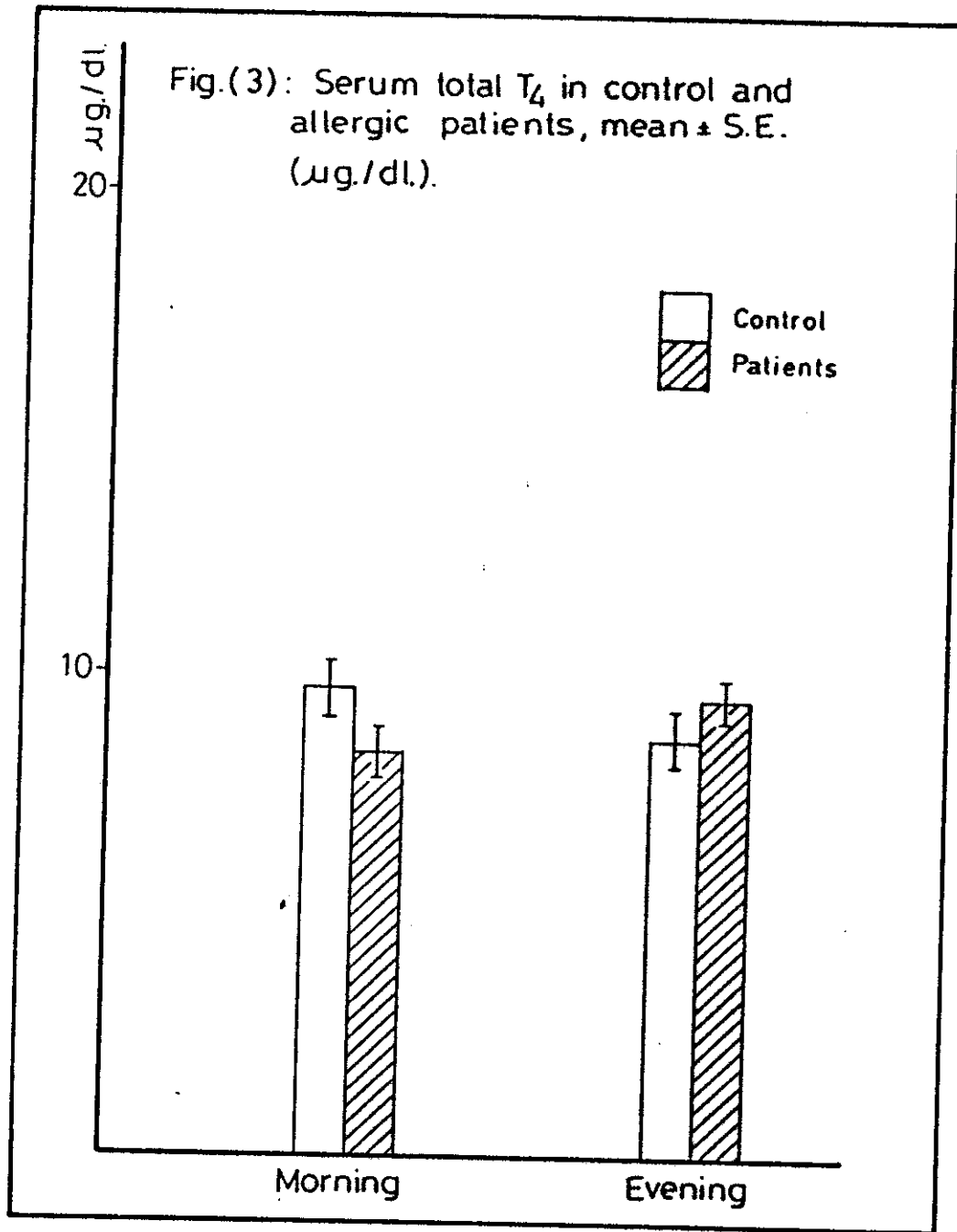
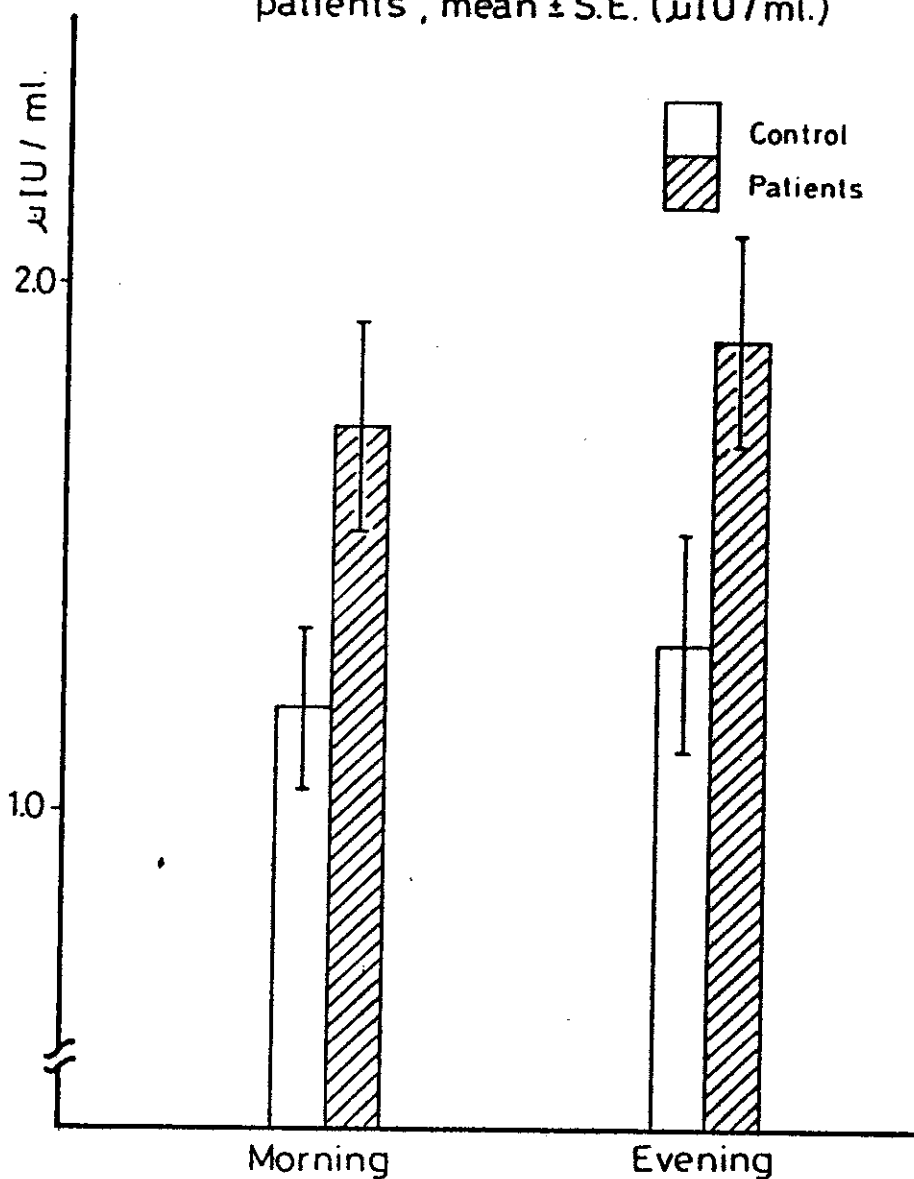


Fig.(4): Serum TSH in control and allergic patients , mean $\pm$ S.E. (μ IU/ml.)



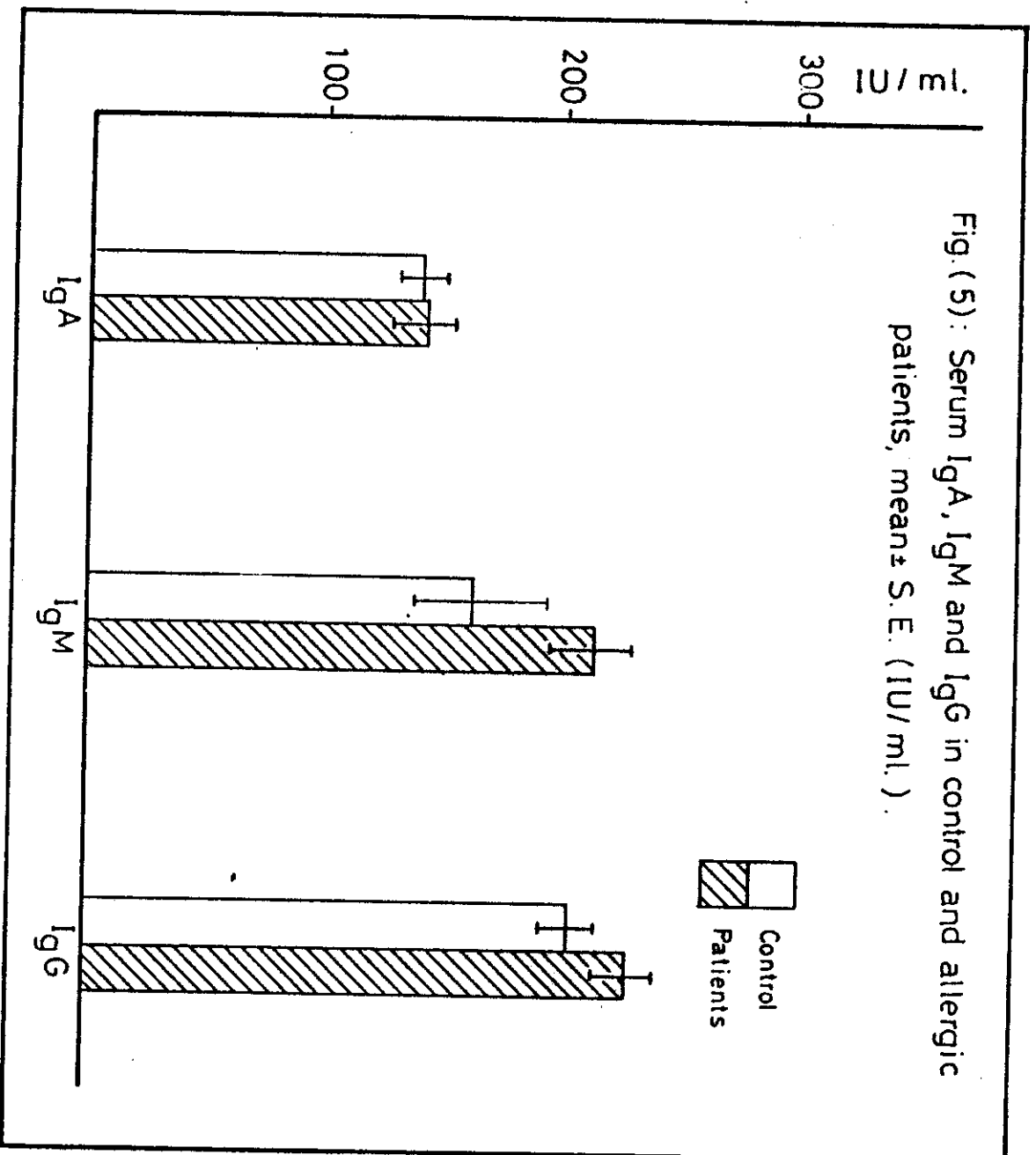


Fig.(6): Serum IgE in control and allergic patients, mean $\pm$ S.E. (IU/ml.).

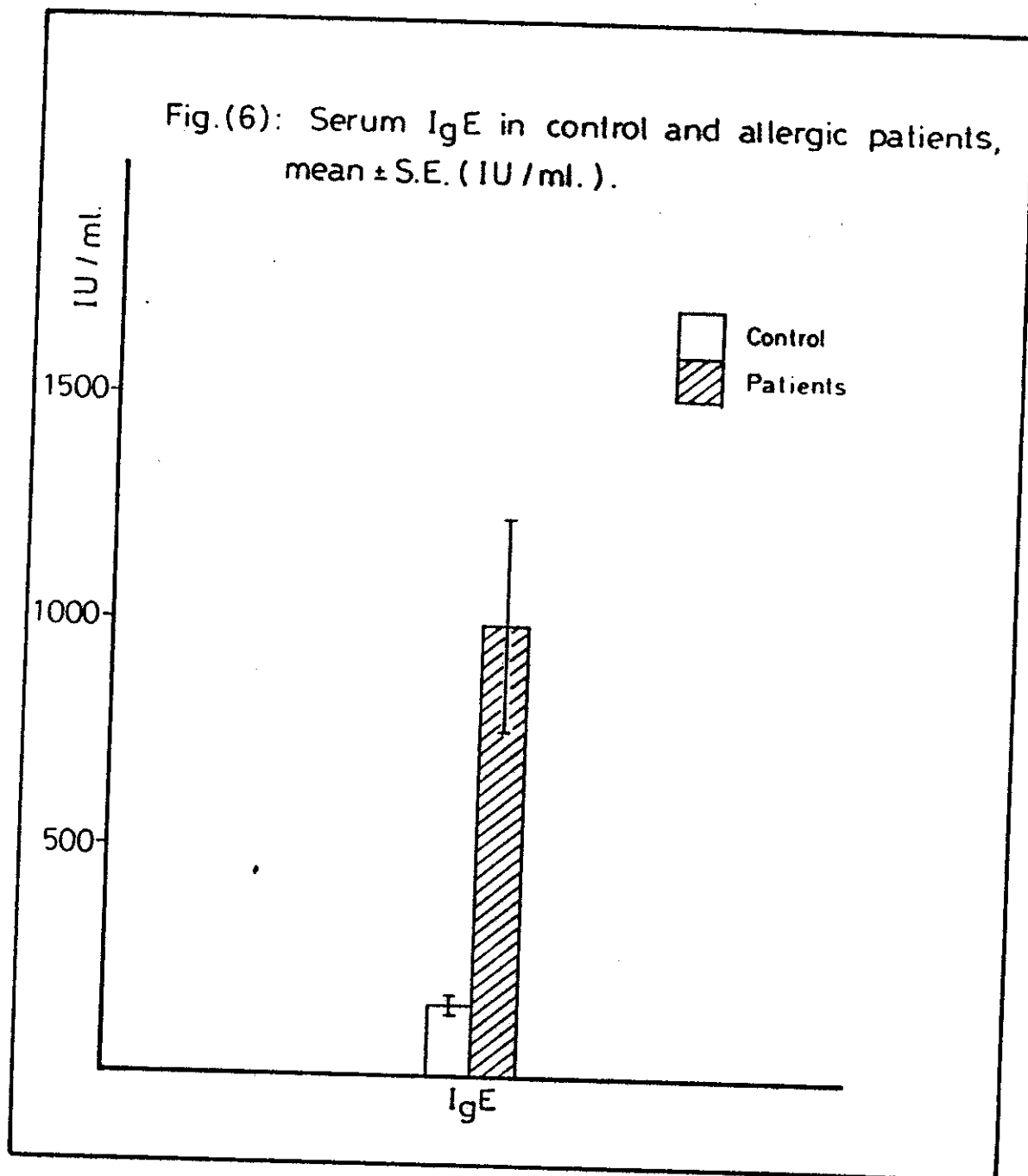


Fig.(7): Serum cortisol level in allergic patients with and without nasal polypi, mean $\pm$ S.E. ($\mu\text{g/dl.}$).

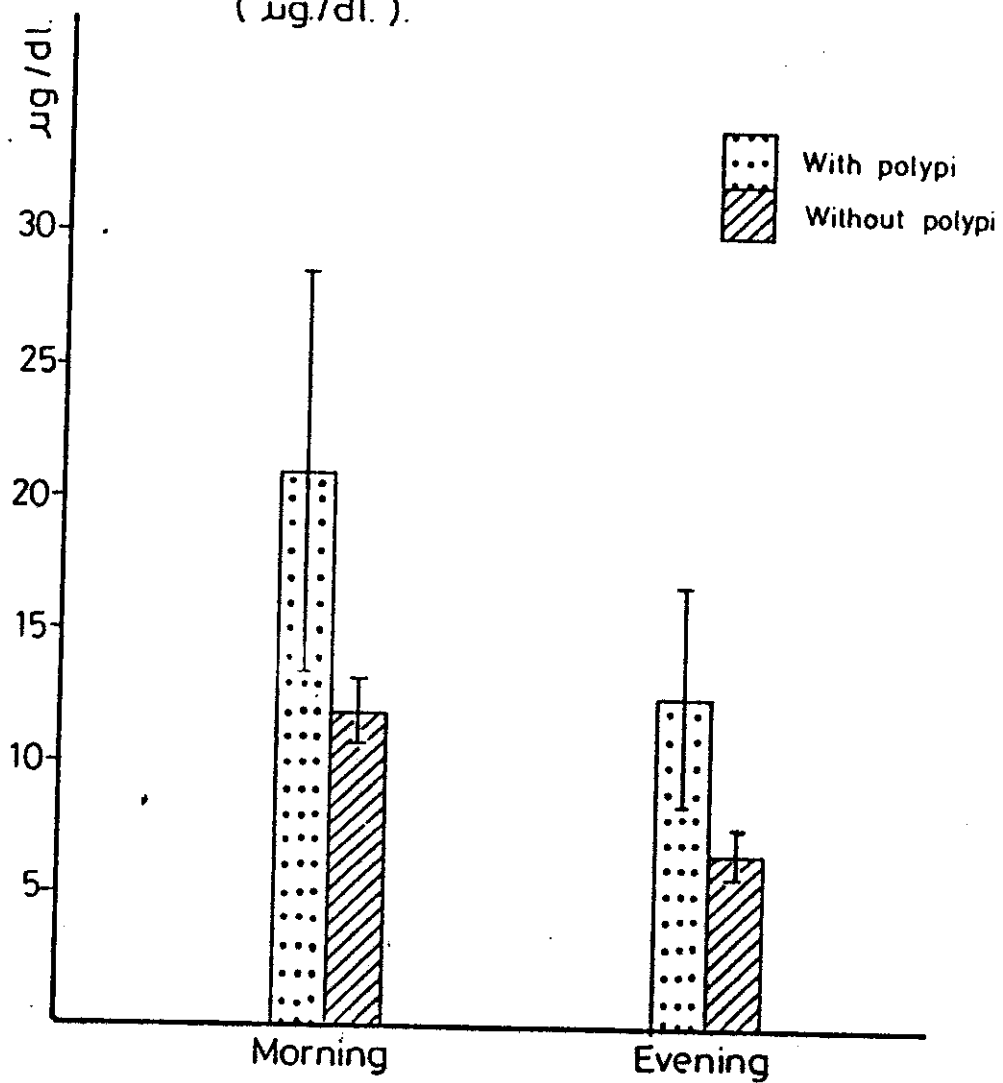
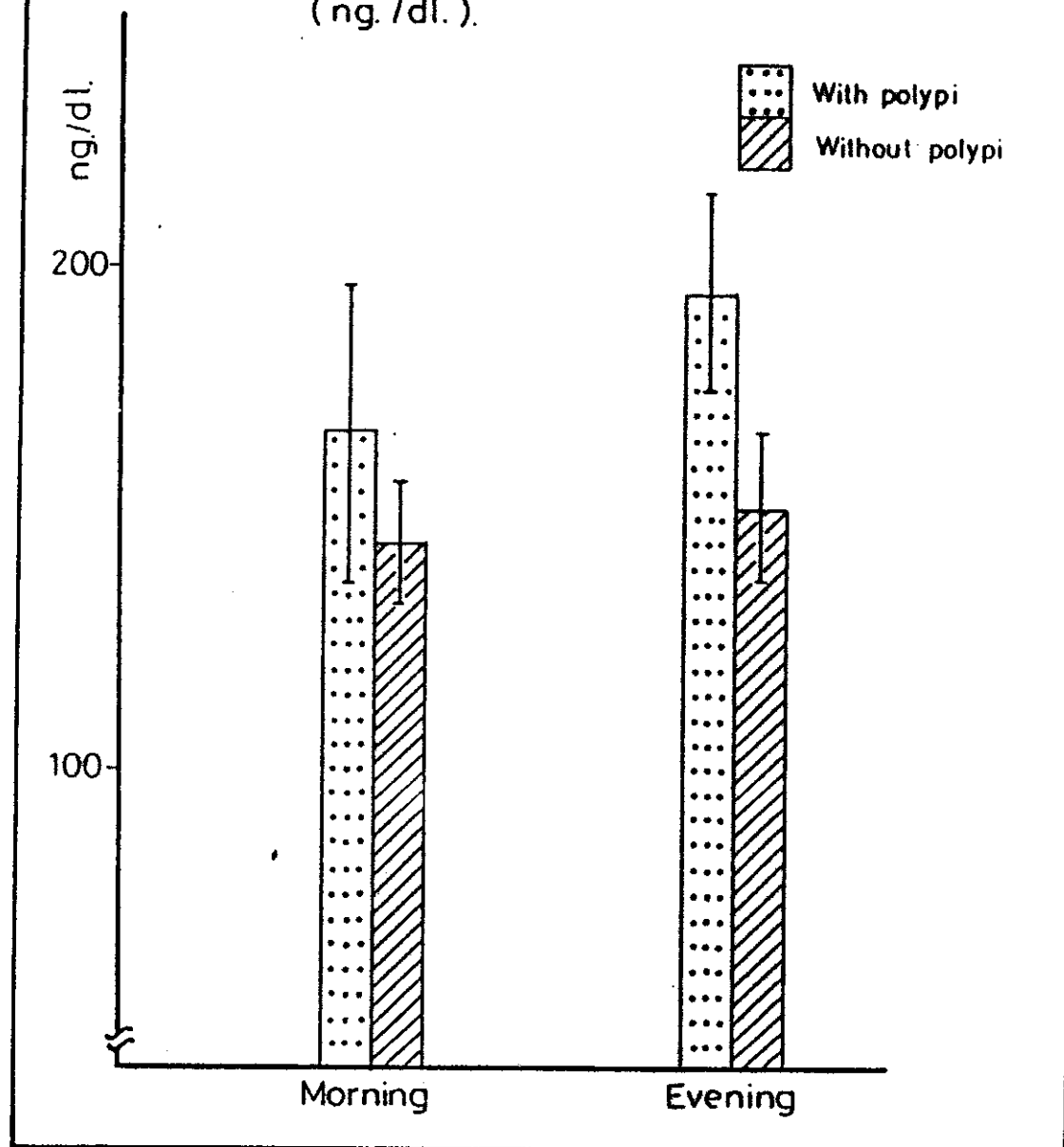


Fig.(8): Serum total T_3 level in allergic patients with and without polypi, mean $\pm$ S.E. (ng./dl.).



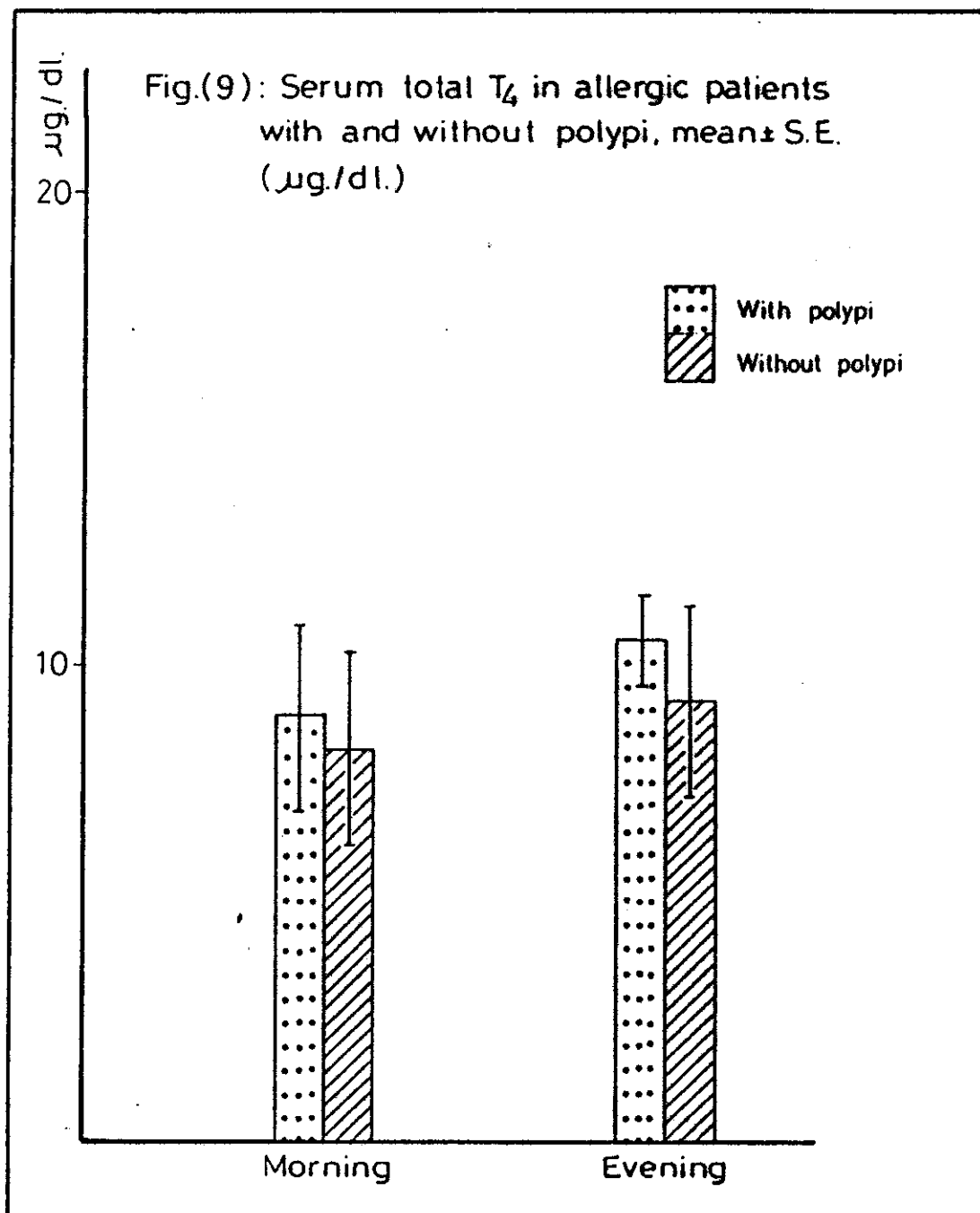


Fig.(10): TSH levels in allergic patients with and without polypi, mean $\pm$ S.E. (μ IU/ml.).

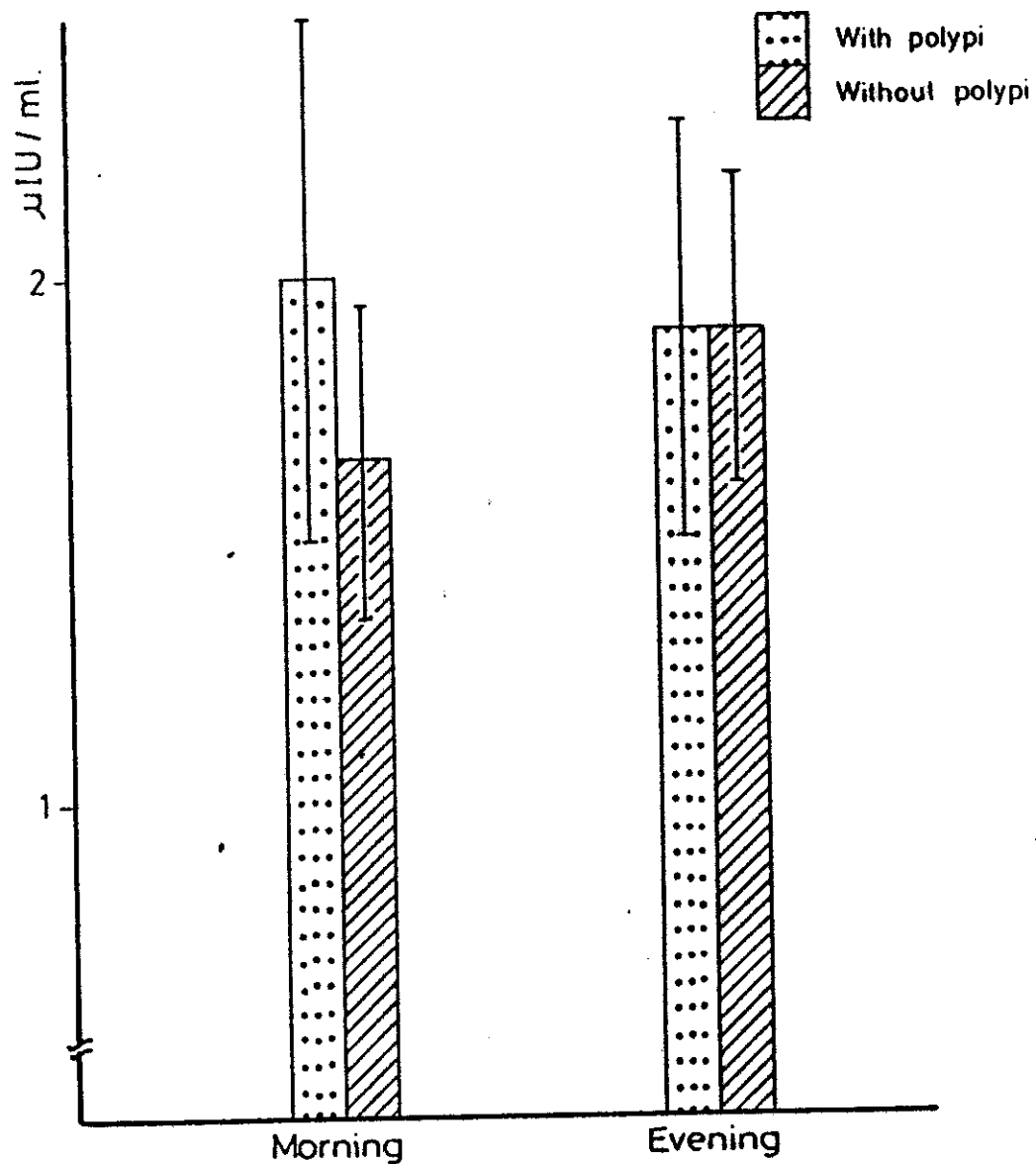


Fig. (11): Serum IgA, IgM and IgG in allergic patients with and without polypi, mean $\pm$ S.E. (IU / ml.)

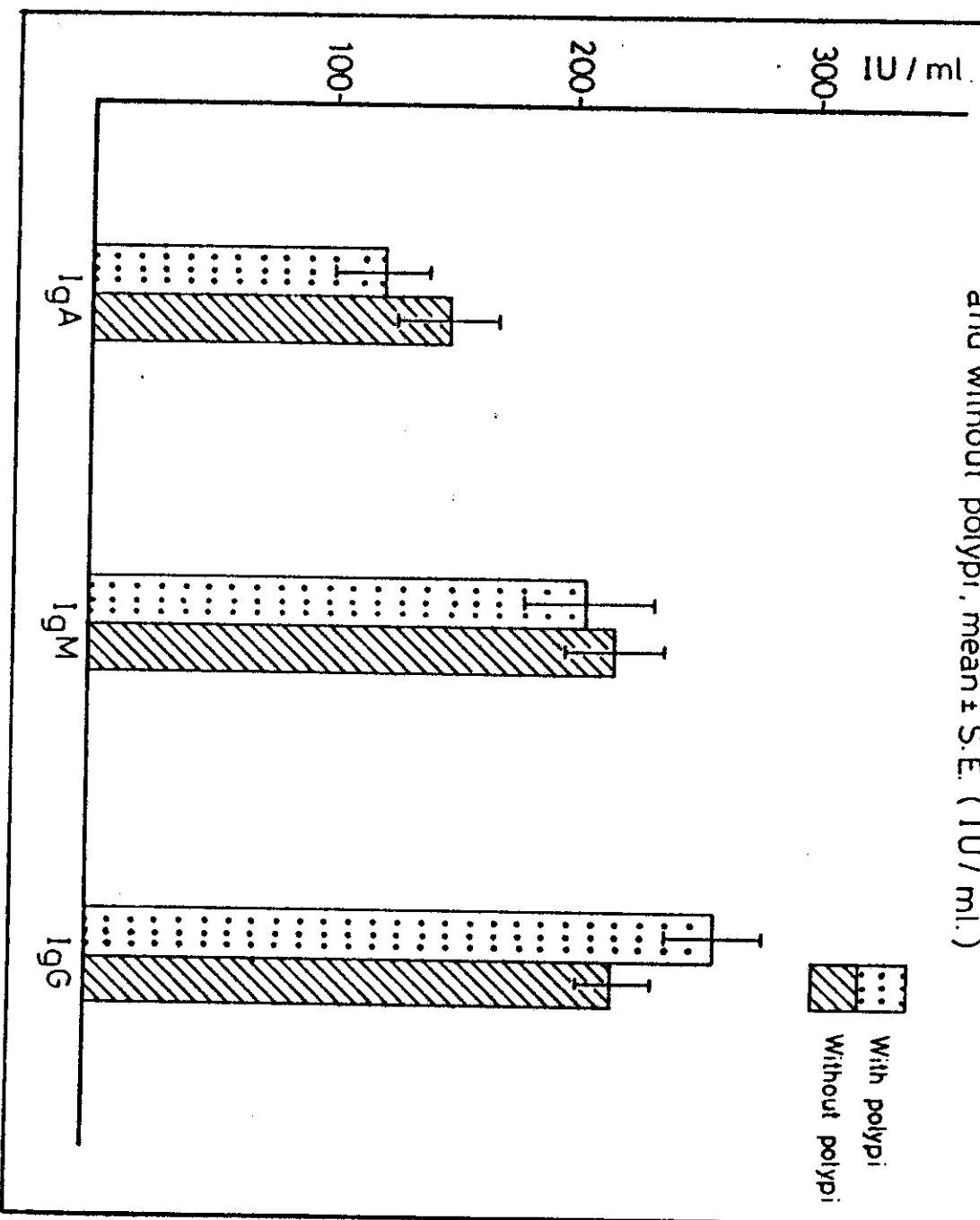


Fig.(12): Serum IgE in allergic patients with and without polypi, mean $\pm$ S.E. (IU / ml.)

