RESULTS

Table (7): Classification of tuberculous children according to age (28 children)

Age	No. of cases	Percent
< 2 yr	4	14.3%
2 – 6 yr	10	35.7%
6 – 12 yr	12	42.9%
12 – 15 yr	2	7.1%

Yr = year

This table Presents the classification of tuberculous children according to their age 14.3% of the patients were below 2 years, 35.7% in the preschool age, 42.9% in the school age and 7.1% above 12 years.

Table (8): Clinical data of the 28 tuberculous children

Variable	Number of patients	Percentage
* **Sex:**		
Male	17	60.7%
Female	11	39.2%
* **Cough**		
Yes	20	71%
No	8	28%
* **Fever**		
Yes	21	75%
No	7	25%
* **Dyspnea**		
Yes	14	50%
No	14	50%
* **Chest pain**		
Yes	10	35%
No	18	65%
* **Anorexia**		
Yes	25	89%
No	3	10.7%
* **Low weight**		
Yes	28	100%
No		
* **Vomiting**		
Yes	12	42%
No	16	57%
* **Constipation**		
Yes	5	17.8%
No	23	82.14%
* **Diarrhea**		
Yes		
No	28	100%
* **Abdominal pain**		
Yes	7	25%
No	21	75%
* **Pallor**		
Yes	24	85%
No	4	14%
* **Cyanosis**		
Present	2	7%
Absent	26	92%
* **Bony pain**		
Yes	9	32%
No	19	67%
* **Headache**		
Yes	4	14.2%
No	24	85.8%
BCG scar		
Present	15	53%
Absent	13	46%
Tuberculin test		
Negative	10	35%
Positive	18	64%
Family history		
Positive	7	25%
Negative	21	75%

Table 8, illustrates the sex, number and percentage of patients suffering from different symptoms and signs. It also shows the number and percentage of BCG scar (46% were absent, 53% were present), tuberculin test result (35% were negative, 64% were positive) and family history of tuberculosis (75% negative, 25% positive).

Table (9): Clinical classification of tuberculous children.

Main types	Sub. Types	No of cases	Percent
I) Pulmonary 8 (28.5%)		8	28.5%
II) Extrapulmonary 15 (57.1%)	Abdominal	5	17.9%
	Skeletal	3	10.7%
	Pericarditis	1	3.6%
	Lymphadenopathy	6	21.4%
	Skin	1	3.6%
III) Mixed (Pulmonary + Extrapul) 4 (14.3%)	Pulmonary T.B + lymphadenopathy	1	3.6%
	Pulmonary T.B + pott's disease	1	3.6%
	Pulmonary T.B + T.B peritonitis	1	3.6%
	Pulmonary T.B + T.B brain	1	3.6%

T.B = Tuberculosis

This table presents the classification of the 28 tuberculous children according to the type of T.B. it shows that 28.5% of the patients were suffering from pulmonary T.B., while 57.1% from extra pulmonary T.B and 14.3% were of mixed from.

Table (10): Chest radiological data of tuberculous children

Variable	Number of patients	Percentage
*** Increase bronchovascular marking**		
Present	4	14%
Absent	24	86%
*** Pneumonic patches**		
Present	7	75%
Absent	21	25%
*** Lymph nodes enlargement**		
Present	1	4%
Absent	27	96%
*** Milliary shadows**		
Present	1	4%
Absent	27	96%
*** Pleural effusion**		
Present	3	11%
Absent	25	89%
*** Cavitary lesions**		
Present	3	11%
Absent	25	89%
*** Bronchiectasis**		
Present	1	4%
Absent	27	96%

This table shows the radiological findings in the 28 tuberculous children, it show that, increase bronchovascular marking in 14%, of cases, pneumonic patches in 75%, lymphnode enlargement in 4%, miliary shadows in 4%, pleural effusion 11%, cavitary lesion 11% and bronchiactasis in 4%.

Table (11): Sonographic data in tuberculous children

Variable	Number of patients	Percentage
*** Hepatomegaly**		
Present	25	89%
Absent	3	11%
*** Spleenomegaly**		
Present	0	
Absent	28	100%
*** Kidney involvement**		
Present	1	4%
Absent	27	96%
*** Lymph node**		
Present	4	14%
Absent	24	86%
*** Ascitis**		
Present	4	14%
Absent	24	86%

This table shows the sonographic findings in tuberculous children. It shows that 89% of the patients were suffering from hepatomegaly, no spleenomegaly, 4% from kidney involvement, 14% from lymphnode involvement and 14% from ascitis

Table (12): Laboratory evaluation of tuberculous children before anti-tuberculous treatment

	Variable	Mean ± SD	Minimum	Maximum
Blood picture and ESR	Haemoglobin gm/dl	130 ±2.1	6.6	15
	Hematocrit %	29.7±5.2	19	40
	RBCs x 10^6	3.94±0.68	2.4	5.9
	TLC x 1000	9.5±3.6	5,100	18,300
	Lymphocyte %	38.19±13.51	18%	60%
	Platelets x 1000	388±155	197	882
	ESR mm	23.82±27.33	5	120
Liver function	ALT U/L	20.82±7.4	6.5	39
	AST U/L	35.51±12.15	14.8	61.3
	Alkaline phosphatase U/L	233±111.6	98	696
	Albumin gm/dl	3.9±0.6	2.3	5
Thyroid function	T3 ng/ml	1.66±0.46	0.71	2.7
	T4 µg/dl	9.2±2.4	4	13
	TSH µIU/ml	2.1±1.4	0.3	4.8
	TBGug/ml	29.07±5.6	20.1	44.8

SD = Standard deviation of the mean
TLC = Total lecuocytic count
ALT = Alanine aminotransferase
T3 = Triiodothyronine
TSH = Thyroid stimulating hormone
RBCs = Red blood cells.
ESR = Erythrocyte sedimentation rate
AST = Aspartate aminotransferase
T4 = Thyroxine
TBG = Thyroxine binding globulin

This table shows mean, standard deviation and ranges of laboratory findings in tuberculous children before treatment regarding C.B.C, ESR, liver functions tests and thyroid functions tests.

Table (13): Laboratory evaluation for patients after anti-tuberculous therapy

	Variable	Mean ± SD	Minimum	Maximum
Liver function	ALT U/L	25.32±8.7	9.3	42
	AST U/L	39.67±14.5	16.5	76.4
	Alkaline phosphatase U/L	250±111.38	39	696
	Albumin g/dL	4.1±0.56	3.1	5.7
Thyroid function	T3 ng/ml	1.28±0.56	0.9	1.6
	T4 µg/dl	6.62±1.35	4	8.5
	TSH µIu/dl	3.8±0.7	2.8	5
	TBG ug/ml	26.84±4.8	17.7	34.6

SD = Standard deviation of the mean
ALT = Alanine aminotransferase
AST = Aspartate aminotransferase
T3 = Triiodothyronine
T4 = Thyroxine
TSH = Thyroid stimulating hormone
TBG = Thyroxine binding globulin

This table shows mean, standard deviation and ranges of different laboratory findings in tuberculous children after treatment regarding liver functions tests and thyroid functions tests.

Table (14): Thyroid function test of healthy control group (15 children).

Variable	Mean ± SD	Minimum	Maximum
T3 ng/ml	1.46±0.52	0.9	2.3
T4 µg/dl	8.40±2.63	5.5	13
TSH µIU/ml	2.63±1.70	0.2	4.8
TBG ug/ml	26.88±4.55	16.1	33.9

SD = Standard deviation of the mean
T3 = Triiodothyronine
T4 = Thyroxine
TSH = Thyroid stimulating hormone
TBG = Thyroxine binding globulin

Table (15): Comparison of thyroid function tests in tuberculous children before and after anti-tuberculous treatment

Variable	Before treatment	After treatment	t-value	p-value
T3 ng/ml	1.66 ± 0.46	1.28 ± 0.21	3.920	0.001*
T4 μg/dl	9.23 ± 2.40	6.62 ± 1.35	5.016	0.000*
TSH μIU/ml	2.16 ± 1.48	3.86 ± 0.70	5.736	0.000*
TBG ug/ml	29.07 ± 5.60	26.84 ± 4.86	2.169	0.058 NS

SD = Standard deviation of the mean
T3 = Triiodothyronine T4 = Thyroxine
TSH = Thyroid stimulating hormone TBG = Thyroxine binding globulin

This table shows highly significant decrease of T3 and T4, highly significant increase of TSH and no significant change in TBG of tuberculous children after antitubercuolus treatment.

Table (16): Comparison of liver function tests in tuberculous children before and after anti-tuberculous treatment

Variable	Before treatment	After treatment	t-value	p-value
ALT U/L	20.82 ± 7.48	25.32 ± 8.77	2.388	0.024*
AST U/L	35.51 ± 12.15	39.67 ± 14.50	1.473	NS(0.152)
Alkaline phosphatase U/L	233.67 ± 111.67	251.96 ± 111.70	1.179	NS(0.248)
Albumin gm/dl	3.91 ± 0.67	4.10 ± 0.56	1.399	NS(0.173)

SD = Standard deviation of the mean
ALT = Alanine aminotransferase AST = Aspartate aminotransferase

This table shows no significant change in liver function tests of tuberculous children after treatment.

Fig. (2): Liver functions in patients before and after therapy

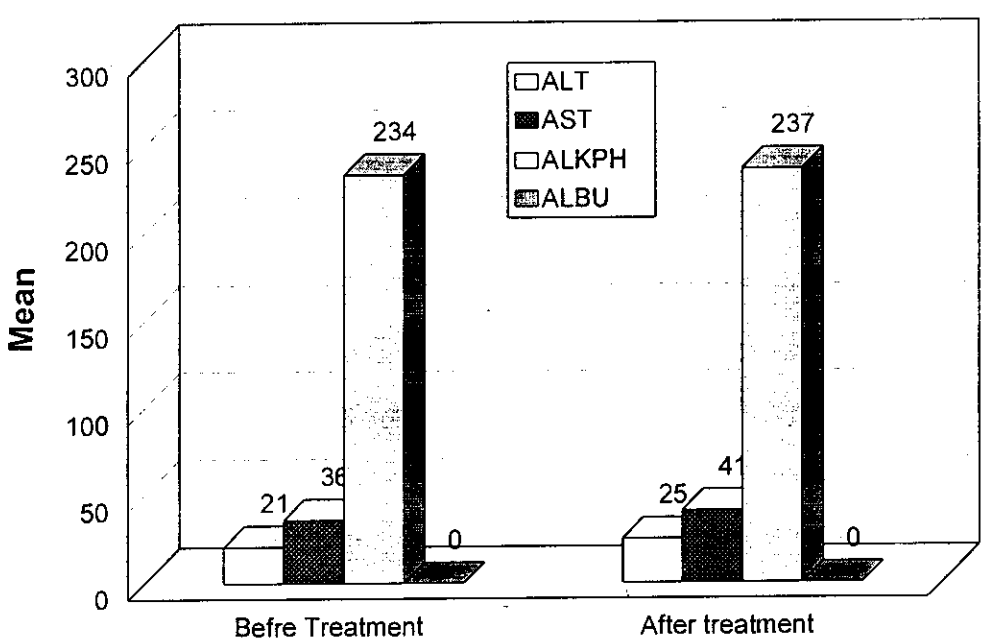


Table (17): Comparison (ANOVAc) of thyroid function tests between tuberculous children before and after antituberculous treatment and the healthy control group

Variable	Before treatment	After treatment	Control	F ratio	p-value
T3 ng/ml	1.66 ± 0.46 As	1.28 ± 0.21 B	1.46 ± 0.52 A	6.090	0.02*
T4 µg/dl	9.23 ± 2.40 A	6.62 ± 1.35 B	8.40 ± 2.63 A	3.797	0.000*
TSH µIU//ml	2.16 ± 1.48 A	3.86 ± 0.70 B	2.62 ± 1.70 A	5.751	0.000*
TBG ug/ml	29.07 ± 5.60	26.84 ± 4.86	26.88 ± 4.55	1.141	NS(0.819)

* = Significant difference
NS = not significant
S = Different letters indicate significant difference.
© = Analysis of variance test was used in the statistical analysis.
SD = Standard deviation of the mean
T3 = Triiodothyronine T4 = Thyroxine
TSH = Thyroid stimulating hormone TBG = Thyroxine binding globulin

The intragroup changes in biochemical variable were assessed by analysis of variance (ANOVA). The over all ANOVA was significant concerning T3, T4 and TSH, which means that the serum T3, T4 levels in the treated group is significantly lower than the values in both before and control groups. While the serum TSH levels is significantly higher in the treated group than both before and control groups. On the other hand the over all ANOVA was insignificant concerning TBG. Which mean that the serum TBG levels shows no statistical difference between the 3 groups, treated, before and control groups.

Fig. (3): Mean Values of T4 in Tuberculous Children Before & After Treatment in Relation to Control Group

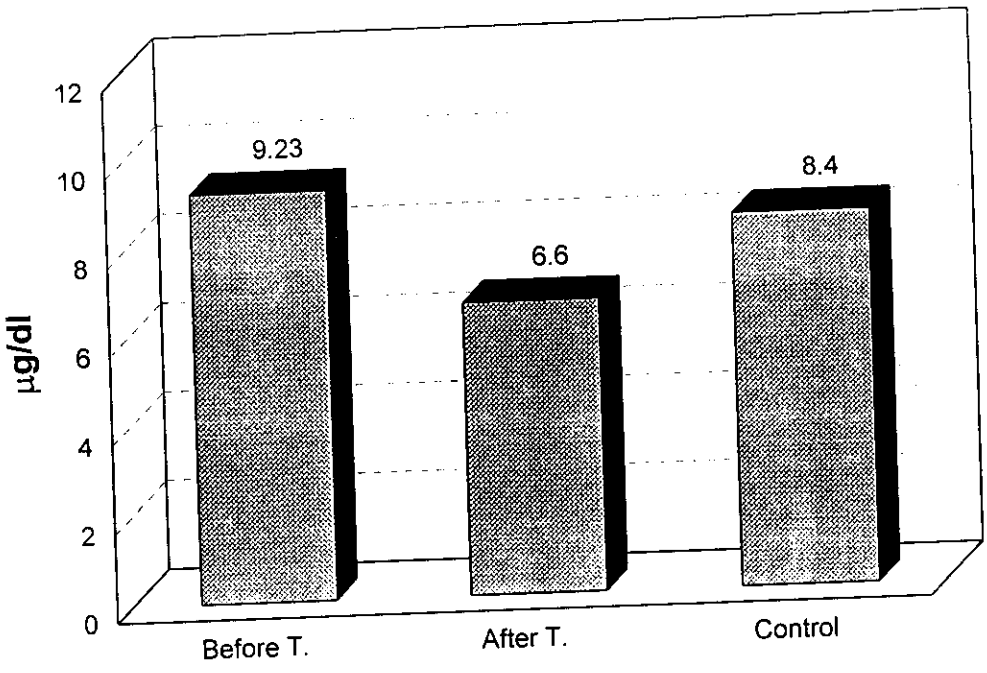


Fig. (4): Mean Values of T3 in Tuberculous Children Before & After Treatment in Relation to Control Group

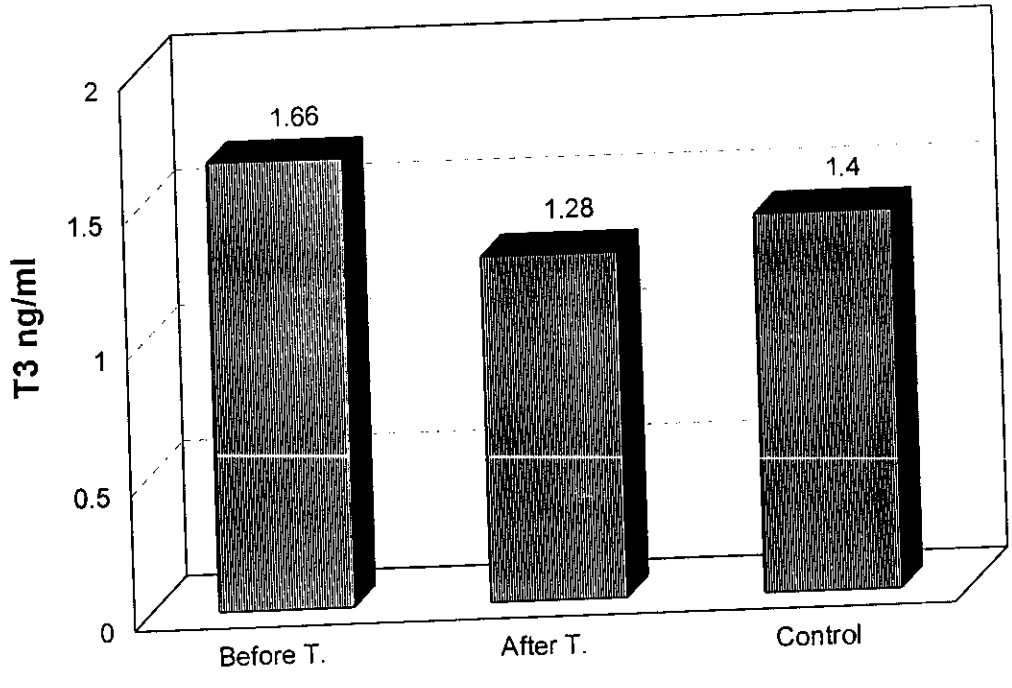


Fig. (5): Mean Values of TSH in Tuberculous Children Before & After Treatment in Relation to Control Group

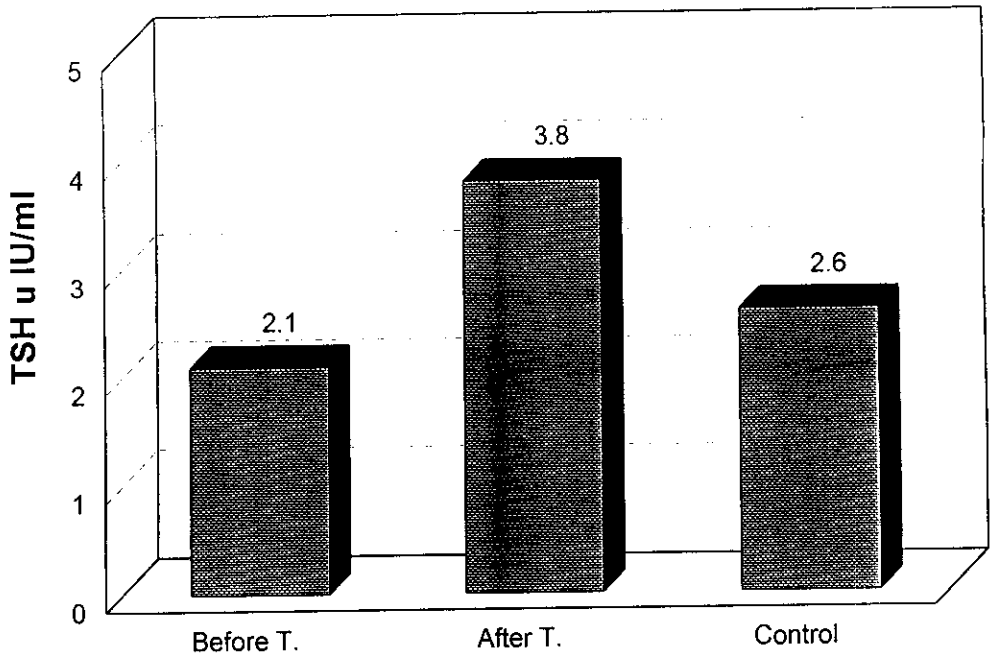
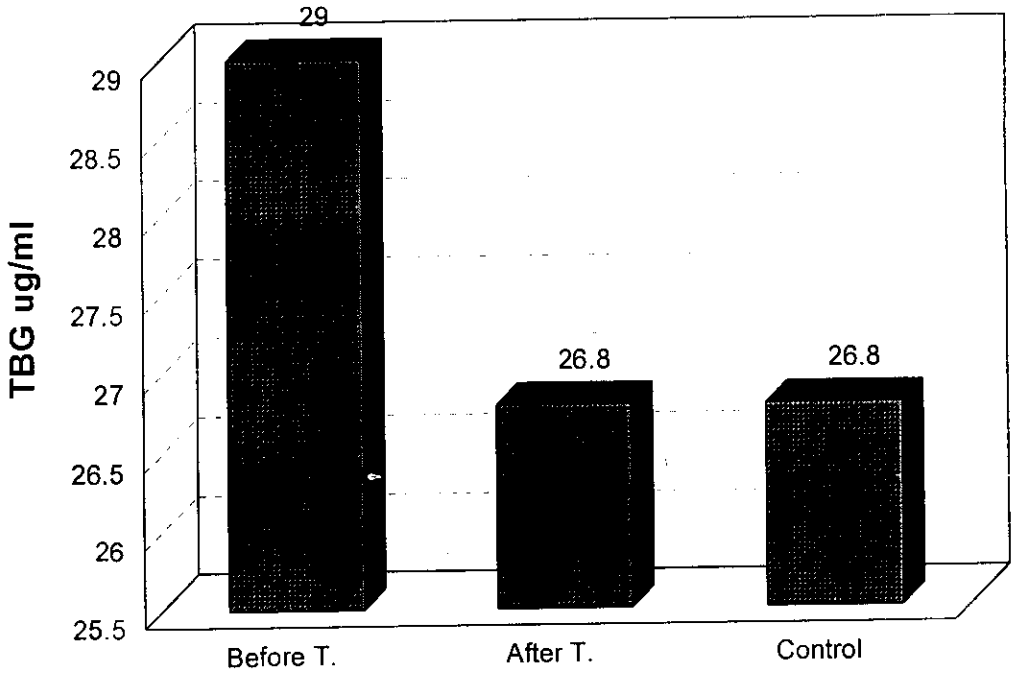


Fig. (6): Mean Values of TBG in Tuberculous Children Before & After Treatment in Relation to Control Group



Patient No. (8), Chest x-ray P.A view and lateral view

Exaggerated hilar and basal bronchovascular markings. Thickened interlobar fissures

Patient No. (14), Chest x-ray P.A view

Right side apical cavity lesion surrounded by pneumonic patch

Patient No. (18), Chest x-ray P.A view

Right middle lung zone cavity surrounded by pneumonia