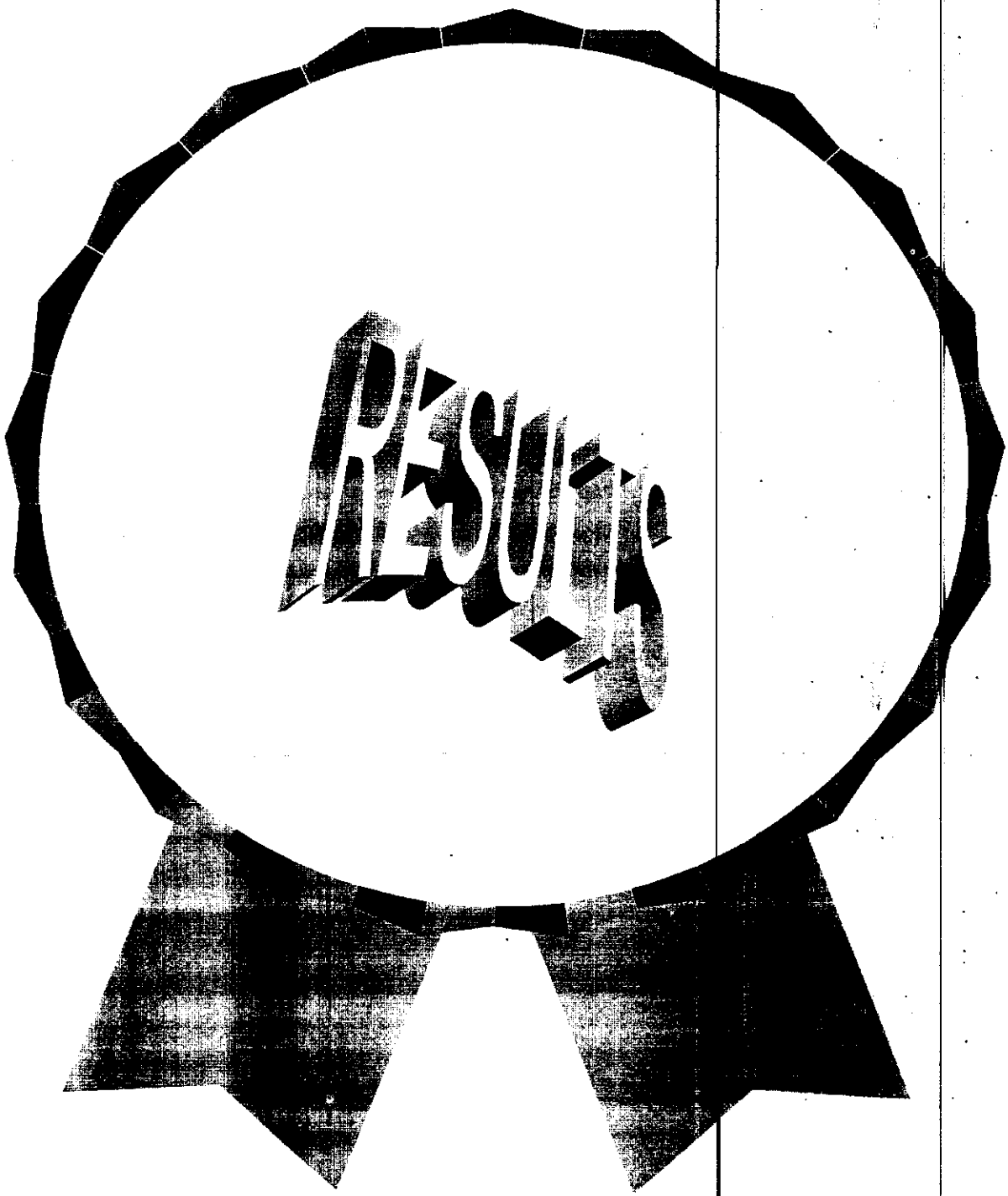

RÉSULTATS

RESULTS

In the present study the percentage of apoptotic cells and serum level of sFAs/APO-1/ CD95 was measured in newly diagnosed, 24 hour after initiation of induction therapy. Measurement of sFas and clinical evaluation after complete induction therapy. The results were correlated with various clinical, hematological and immunophenotypic prognostic criteria.

The results of the present study are summarized in tables (1-24) and figures (1-20).

Patients characteristic (Table 1-2):

Table (1): **Sex distribution in 30 children with ALL.**

Sex	No.	%
Male	19	63.33
Female	11	36.67
Total	30	100%

This table shows:

Sex distribution of patients, 19 patients were male (63.33%) and 11 were females (36.67%).

Fig. (1) : Sex distribution in 30 children with ALL.

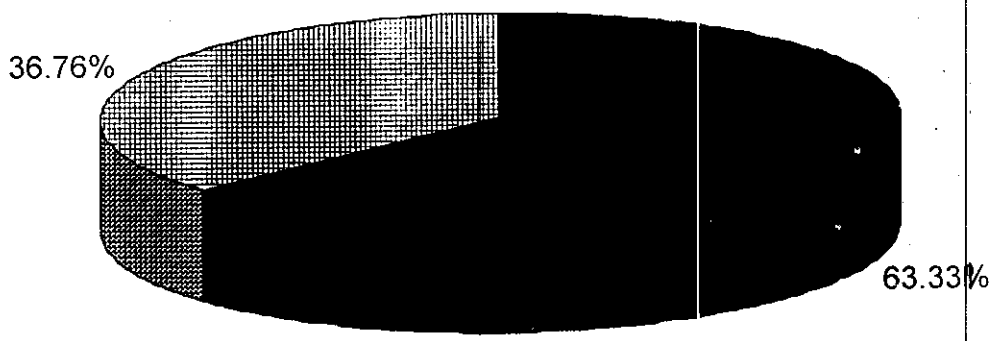


Table (2): **Age distribution in 30 children with ALL.**

Age in year	No.	%
<2 years	2	6.67
2-10 years	24	80
>10 years	4	13.33

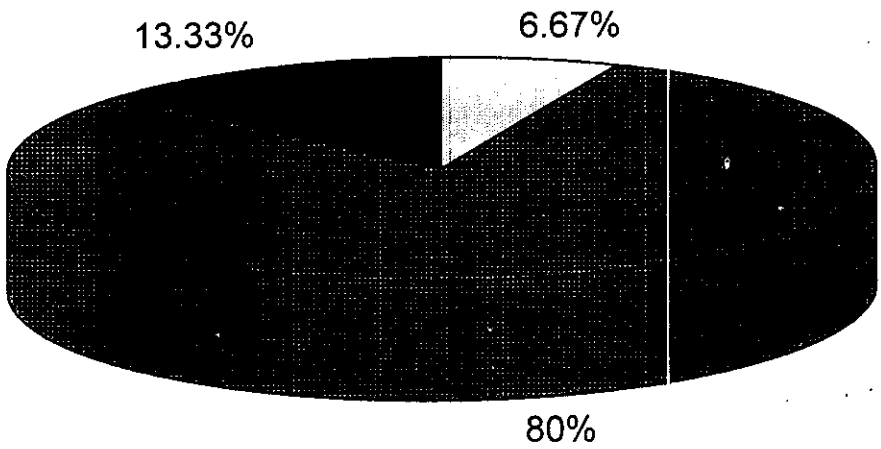
This table shows:

- Twenty four patients were in the age ranging from 2-10 years. They represent (80%) of all studied patients.

- Two patients were less than two years of age. They represent (6.67%) of all studied patients.

- Four patients were above 10 years. They represent (13.33%) of all studied patients.

Fig. (2) : Age distribution in 30 children with ALL.



Clinical picture of studied children are shown in tables 3 and 4:

Table (3): **Presenting symptoms in 30 children with ALL at diagnosis.**

Symptoms	No.	%
Anaemic symptoms (fatigue and pallor)	24	80
Fever	18	60
Bleeding symptoms (bleeding & purpura)	10	33.33
Lymphadenopathy	10	33.33
Bone ache	5	16.67
Abdominal enlargement	4	13.33

This table shows:

Anaemic symptoms (fatigue and pallor) were the commonest presenting symptoms as they were found in 24 patients (80%). Fever was the presenting symptoms in 18 patients (60%). Bleeding tendency was observed in 10 patients (33.33%). Lymphadenopathy was the presenting symptoms in 10 cases (33.33%). Bone ache was recorded in 5 patients (16.67%) and progressive abdominal enlargement was found in 4 patients (13.33%).

Fig. (3) : Presenting symptoms in 30 children with ALL.

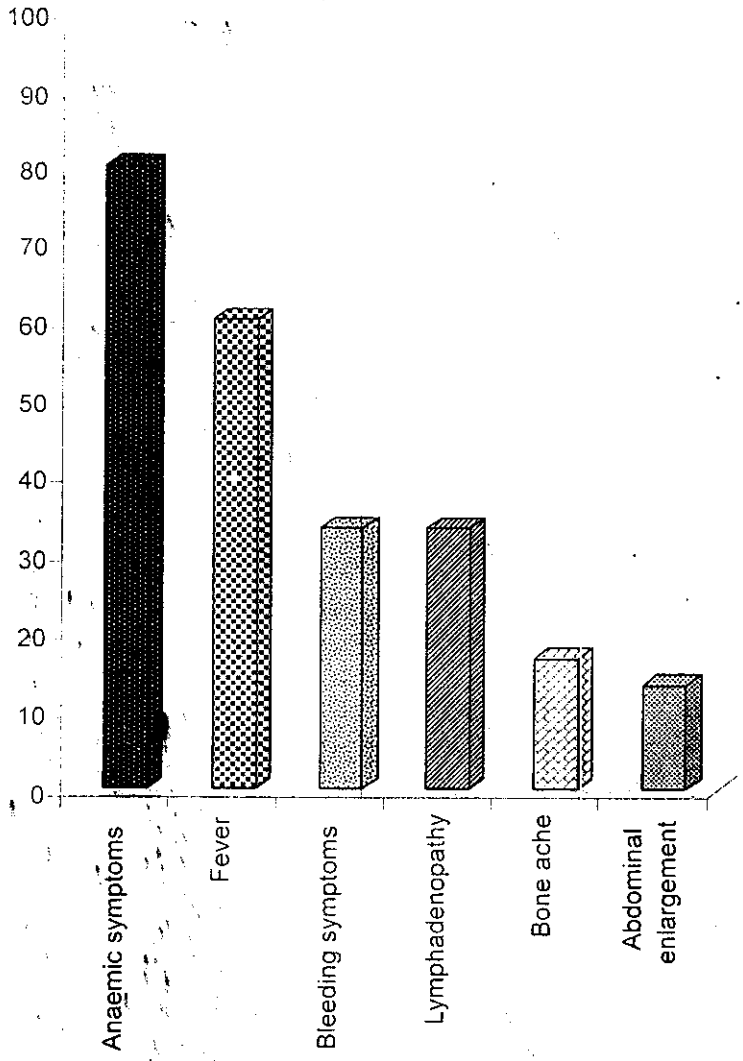


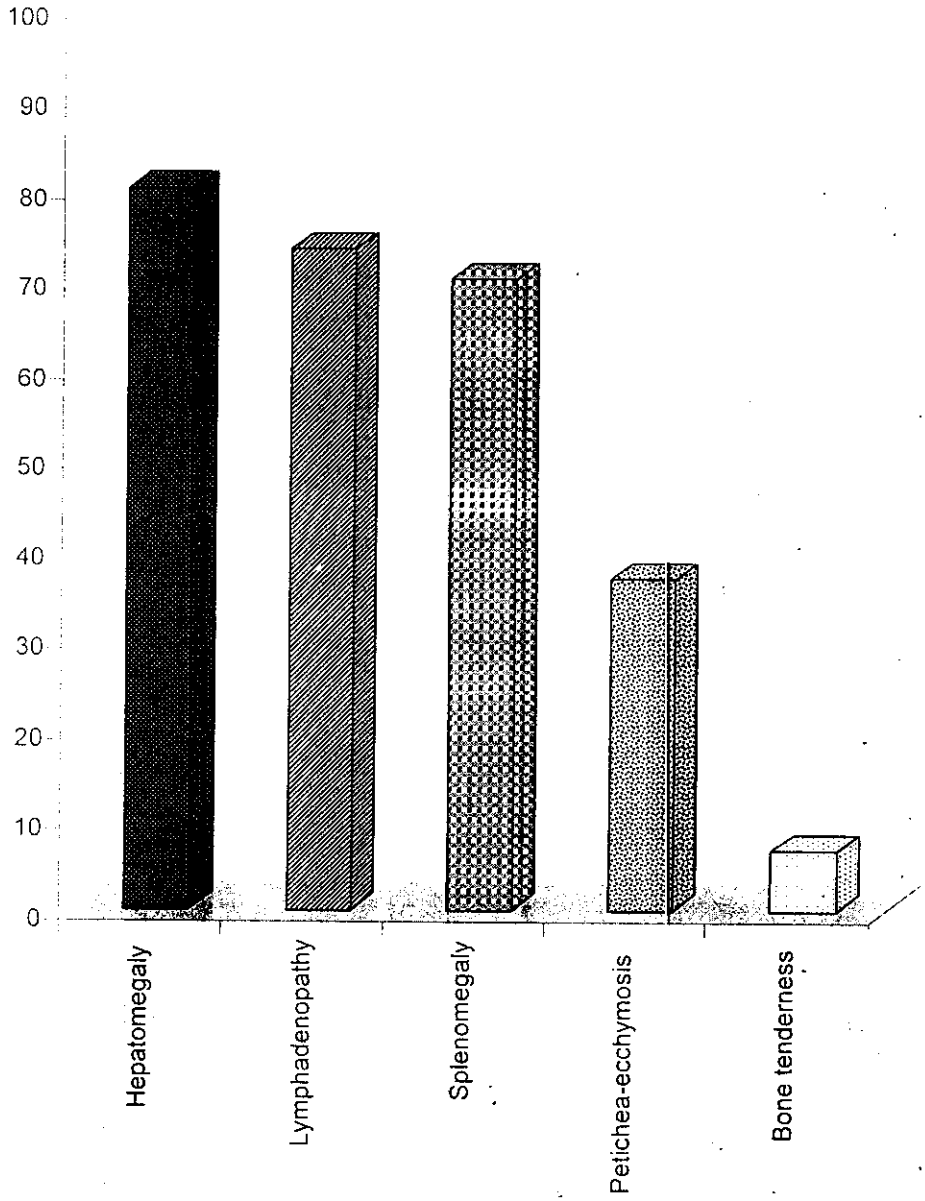
Table (4): **Frequency of physical signs in 30 children with ALL.**

Sign	No.	%
Hepatomegaly	24	80
Lymphadenopathy	22	73.33
Splenomegaly	21	70
Petichea-ecchymosis	11	36.66
Bone tenderness	2	6.7

This table shows:

- Eighty percent of the study group has hepatomegaly (24 patients).
- Lymphadenopathy was found in 22 patients (73.33%).
- Twenty one patients had splenomegaly (70%).
- Peticheal haemorrhage and echymosis were found in 11 patients (36.66%).
- Only 2 cases showed bone tenderness (6.7%).

Fig. (4) : Frequency of physical signs in 30 children with ALL.



Laboratory findings:

Table (5): **Total leucocytic count in 30 children with ALL.**

TLC /cmm	No. of cases	%
< 10000	6	20
10000 – 50000	8	26.67
> 50000	16	53.33

This table shows:

- TLC less than 10,000/cmm was found in 6 patients. They represent (20%) of all studied patients.
- TLC ranging from 10,000 - 50,000/cmm was found in 8 patients. They represent (26.66%) of all studied patients.
- TLC more than 50,000/cmm was found in 16 patients. They represent (53.33%) of all studied patients.

Fig. (5) : Total leucocytic count in 30 children with ALL.

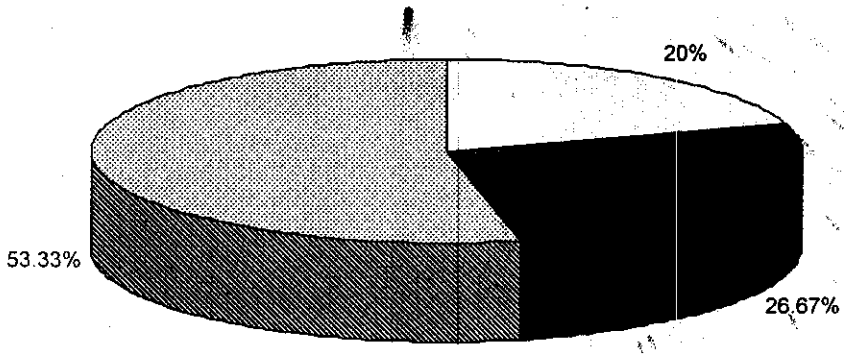


Table (6): **Haemoglobin levels in 30 children with ALL.**

Hg (gm/dl)	No.	%
<7	16	53.33
7-10	11	36.67
≥ 10	3	10

This table shows:

- Haemoglobin less than 7 gm/dl was found in 16 patients. They represent (53.33%) of all studied patients.
- Haemoglobin ranging from 7-10 gm/dl was found in 11 patients. They represent (36.67%) of all studied patients.
- Haemoglobin more than 10 gm/dl was found in only 3 patients. They represent (10%) of all studied patients.

Fig. (6) : Haemoglobin levels in 30 children with ALL.

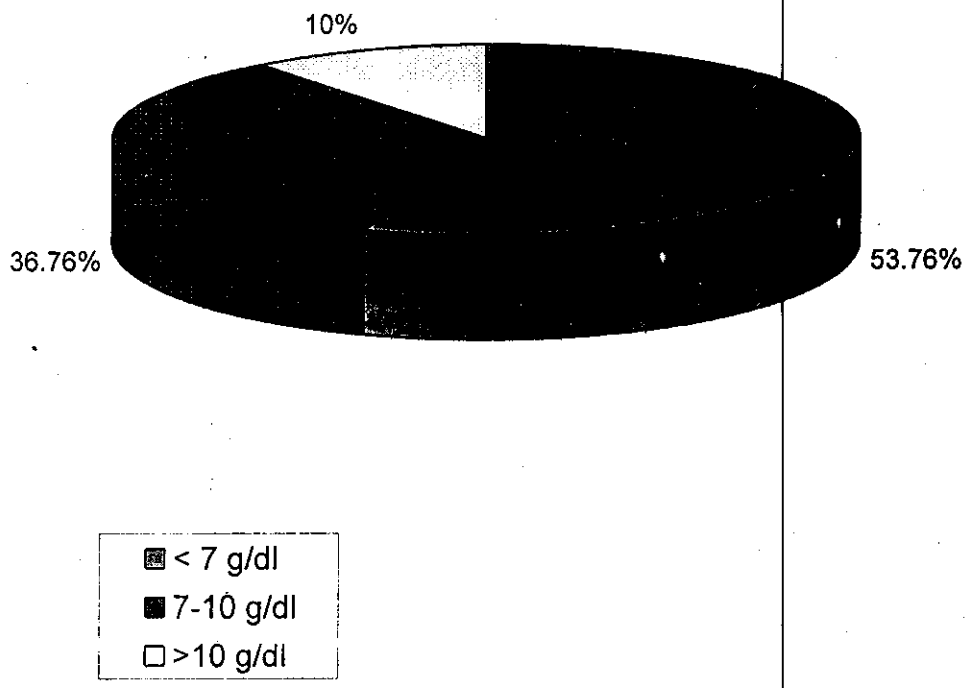


Table (7): **Platelets count in 30 children with ALL.**

Platelets count/cmm	No.	%
< 30.000	10	33.33
30.000 – 100.000	18	60
> 100.000	2	6.67

This table shows:

- Platelets count less than 30.000/cmm was found in 10 patients. They represent (33.33%) of all studied patients.
- Platelets count ranging from 30.000-100.000/cmm was found in 18 patients. They represent (60%) of all studied patients.
- Platelets count more than 100.000/cmm was found in 2 patients. They represent (6.67%) of all studied patients.

Fig. (7) : Platelets count in 30 children with ALL.

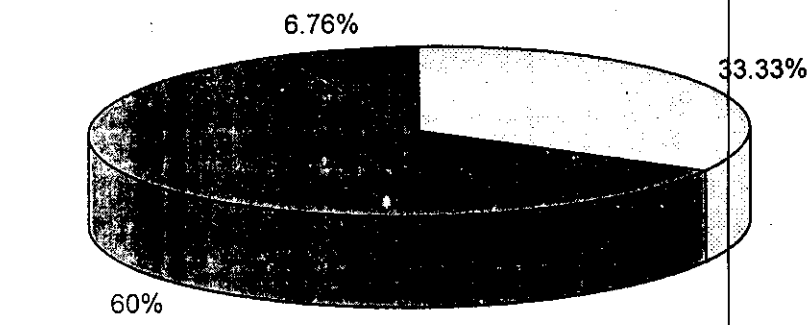


Table (8): **FAB classification in 30 children with ALL.**

FAB	No.	%
L1	4	13.33
L2	25	83.34
L3	1	3.33
Total	30	100.0

This table shows:

- L1 type was found in 4 patients. They represent (13.33%) of all studied patients.
- L2 type was found in 25 patients. They represent (83.34%) of all studied patients.
- L3 type was found in only one patients, that represents (3.33%).

Fig. (8) : FAB classification in 30 children with ALL.

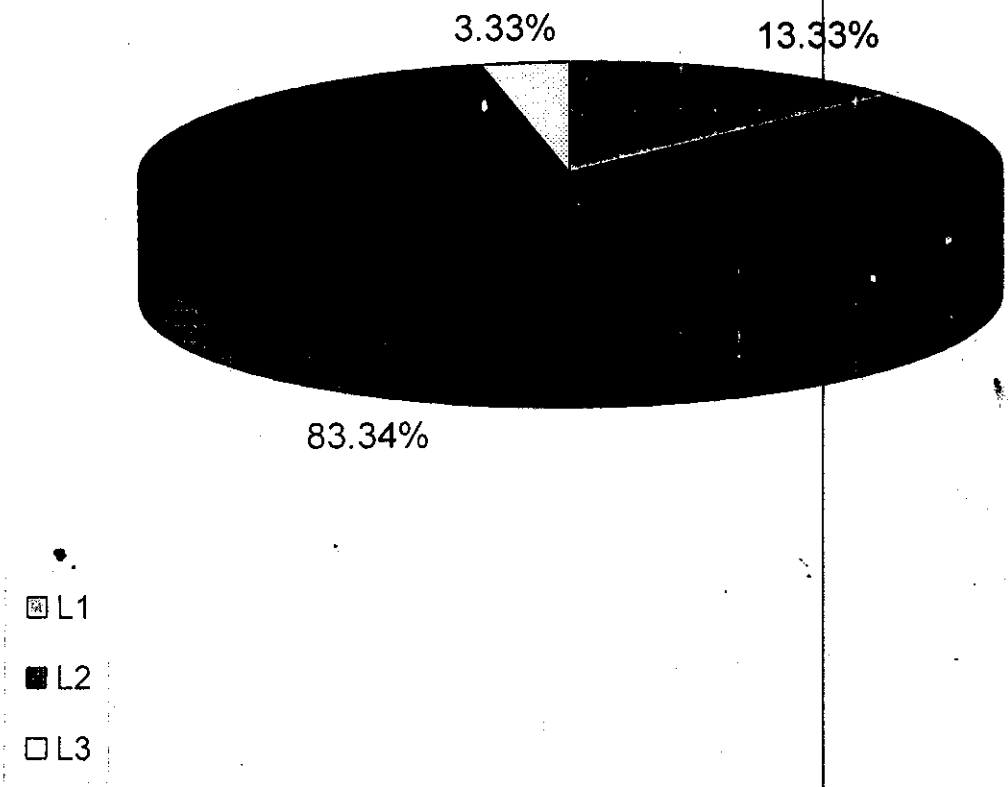


Table (9): **Immunophenotyping in 30 children with ALL.**

Immunophenotyping	No.	%
Early pre B ALL	5	16.67
Pre B ALL	14	46.67
B ALL	4	13.33
T ALL	7	23.33
Total	30	100%

This table shows:

- Early pre B ALL was found in 5 patients. They represent (16.67%) of all studied patients.
- Pre B ALL was found in 14 patients. They represent (46.67%) of all studied patients.
- B ALL was found in 4 patients. They represent (13.33%) of all studied patients.
- T ALL was found in 7 patients. They represent (23.33%) of all studied patients.

Fig. (9) : Immunophenotyping in 30 children with ALL.

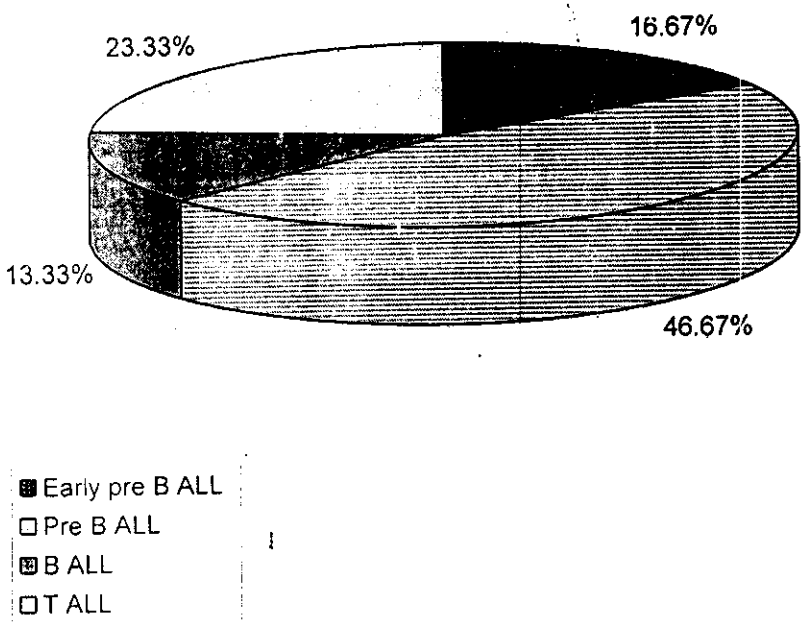


Table (10): **Other laboratory data of studied children with ALL.**

Investigation	No	Percentage
*** Liver enzymes**		
Normal	24	80
Above normal	6	20
*** Kidney functions**		
Normal	28	93.4
Above normal	2	6.6
Uric acid level		
Normal	24	80
Above normal	6	20
LDH		
Normal	16	53.33
Above normal	14	46.67

* Liver enzymes (ALT and AST)

* Kidney function tests (blood urea and serum creatinine)

This table (10) shows:

Some laboratory finding among 30 children with ALL, where serum level of ALT and AST above normal were recovered in 20% of the cases at diagnosis. High blood urea and serum creatinine were found in 6.6% of the cases, while serum uric acid level above normal was found in 20% of the cases and serum LDH level above normal was detected in 46.67% of the cases at diagnosis.

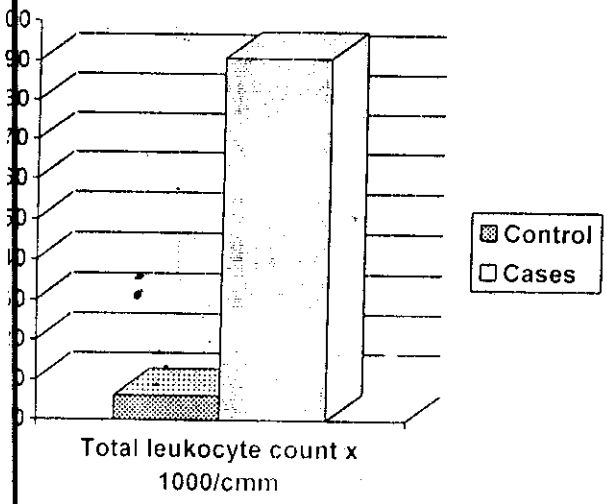
Table (11): **Comparison between cases before therapy and control group regarding mean TLC, Hb and platelets counts and LDH level.**

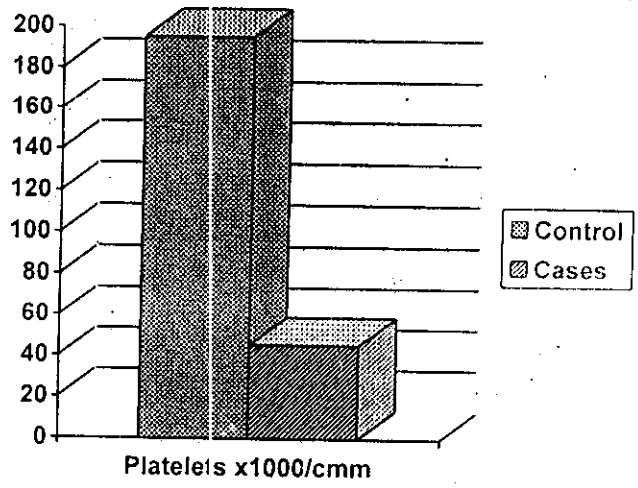
Studied gps / riable	Cases before therapy (n = 30) Mean ± SE	Controls (n=10) Mean ± SE	t	P
C (X 10^3/cmm)	90.726 ± 24.53	6.16 ± 0.37	4.029	<0.001
(g/dl)	6.703 ± 0.40	11.65 ± 0.34	-4.498	< 0.001
telets count (X 10^3/cmm)	45.3 ± 4.81	195 ± 7.93	-4.685	<0.001
H (U/L)	2241.47 ± 500.24	463.7 ± 32.09	2.905	< 0.01

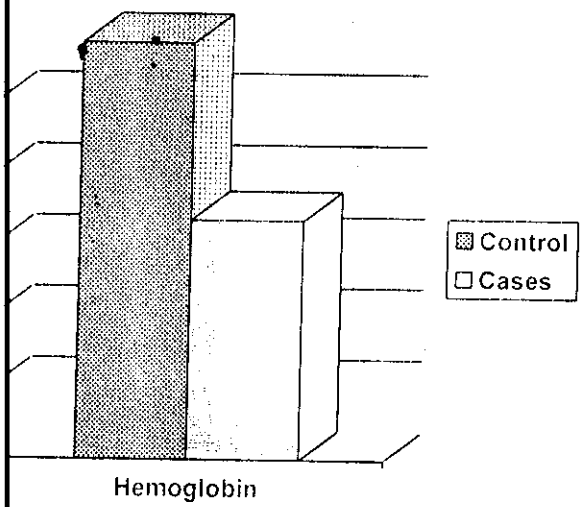
This table shows:

- There was significant increase in TLC and LDH in cases than control group.
- There was significant decrease in Hb level and platelets count in cases than control group.

Figure (10): Comparison between cases before therapy and control group regarding mean TLC, Hb, platelet count, and LDH







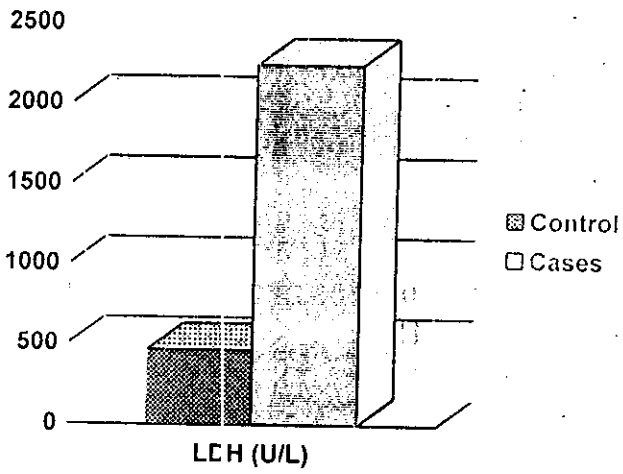


Table (12): **Comparison between mean TLC in the studied cases before, 1 day and 1 month after start of therapy.**

TLC / Phase	Range x 10^3/ cmm	Mean x 10^3/ cmm ± SE	Paired t-value	P
Before (n=30)	6-608.7	90.726±24.53	3.258	<0.001
1 day (n=30)	1.65-104	13.651±4.41		
Before (n=30)	6-608.7	90.726±24.53	3.5916	<0.001
1 month (n=28)	3.9-66.1	11.89 ± 2.52		
1 day (n=30)	1.65-104	13.651± 4.41	0.668	>0.05
1 month (n=28)	3.9 –66.1	11.89± 2.52		

This table shows:

- There was highly significant difference between mean TLC before treatment and one day after initiation of induction therapy being higher before treatment.
- Also there was significant decrease in mean TLC one month after induction therapy than before treatment.
- There was no significant difference between mean TLC one day and one month after induction therapy ($P > 0.05$).

Table (13): **Comparison between mean Hb levels in the studied cases before, after 1 day and 1 month after therapy.**

Hb Phase	Range (g/dl)	Mean ± SE (g/dl)	Paired t-value	P
Before (n=30)	2.7-10.6	6.703± 0.40		
1 day (n=30)	4.3-12.5	8.297 ± 0.38	-3.074	<0.001
Before (n=30)	2.7-10.6	6.703 ± 0.40		
1 month (n=28)	6.7-12.5	10.09 ± 0.26	-6 667	<0.001
1 day (n=30)	4.3-12.5	8.029 ± 0.38		
1 month (n=28)	6.7-12.5	10.09 ± 0.26	-3.''407	<0.00

This table shows:

- There was significant increase in mean Hb level one day after therapy than before start of therapy.
- There was significant increase in mean Hb levels one month after therapy than before start of therapy.
- There was significant increase in mean Hb levels one month after therapy than one day after start of therapy.

Fig. (12) Comparison between mean Hb levels in the studied cases before, 1 day and 1 month after start of therapy.

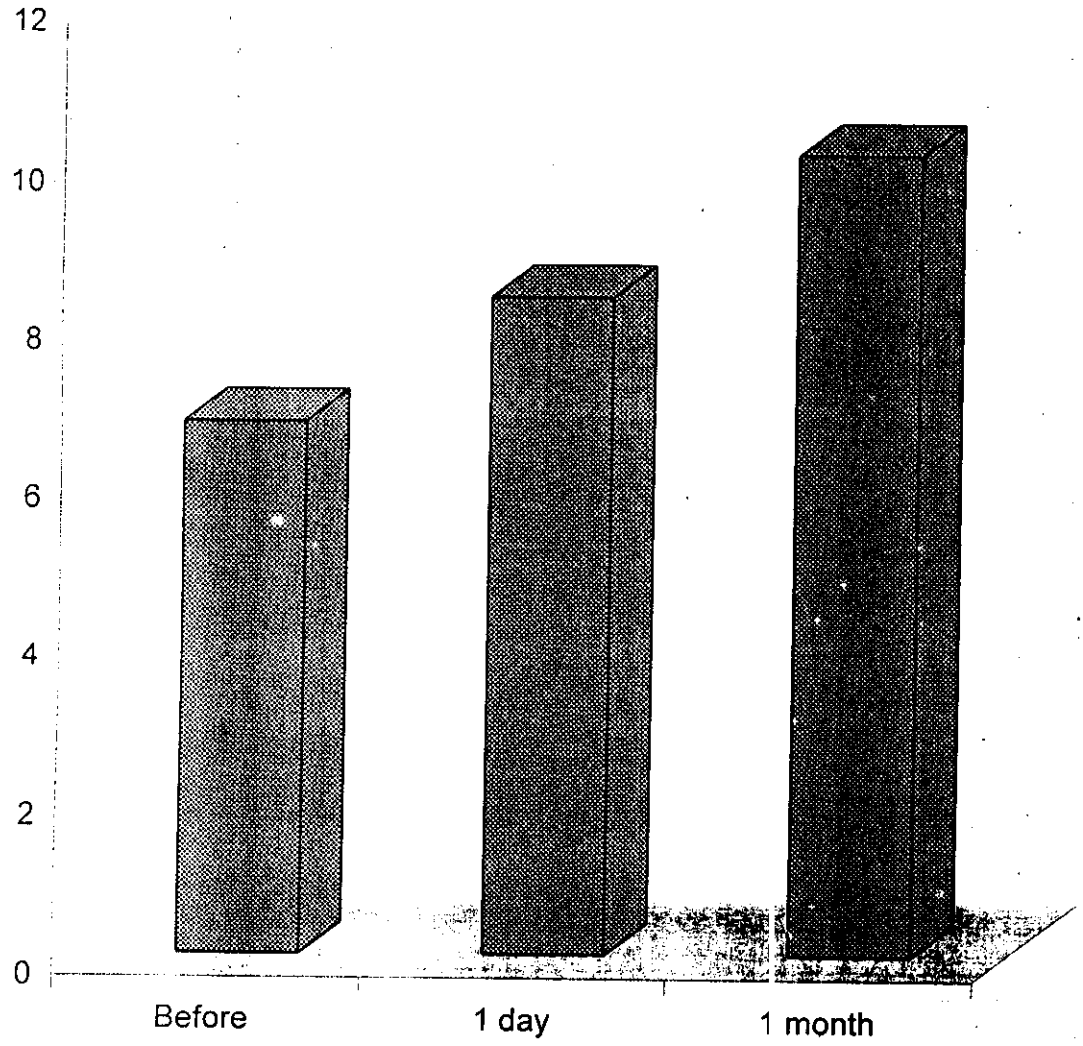


Table (14): **Comparison between mean platelets count of the studied cases before, 1 day and 1 month after start of therapy.**

Platelets / Phase	Range x 10^3/ cmm	Mean x 10^3/ cmm :: SE	t-value	P
Before (n=30)	19-103	45.3 ± 4.81		
1 day (n=30)	17-90	46.67 ± 3.39	-0.5192	>0.05
Before (n=30)	19-103	45.3 ± 4.81		
1 month (n=28)	66-193	127.21± 6.23	-9.375	<0.001
1 day (n=30)	17-90	46.67 ± 3.39		
1 month (n=28)	66-193	127.21± 6.23	-10.0943	<0.001

This table shows:

- There was no significant difference between mean platelets count before and one day after therapy.
- There was highly significant increase in mean platelets count one month after therapy than before treatment.
- There was highly significant increase in mean platelets count one month after therapy than one day after therapy.

Fig. (13) : Comparison between mean platelets count in the studied cases before, 1 day and 1 month after start of therapy.

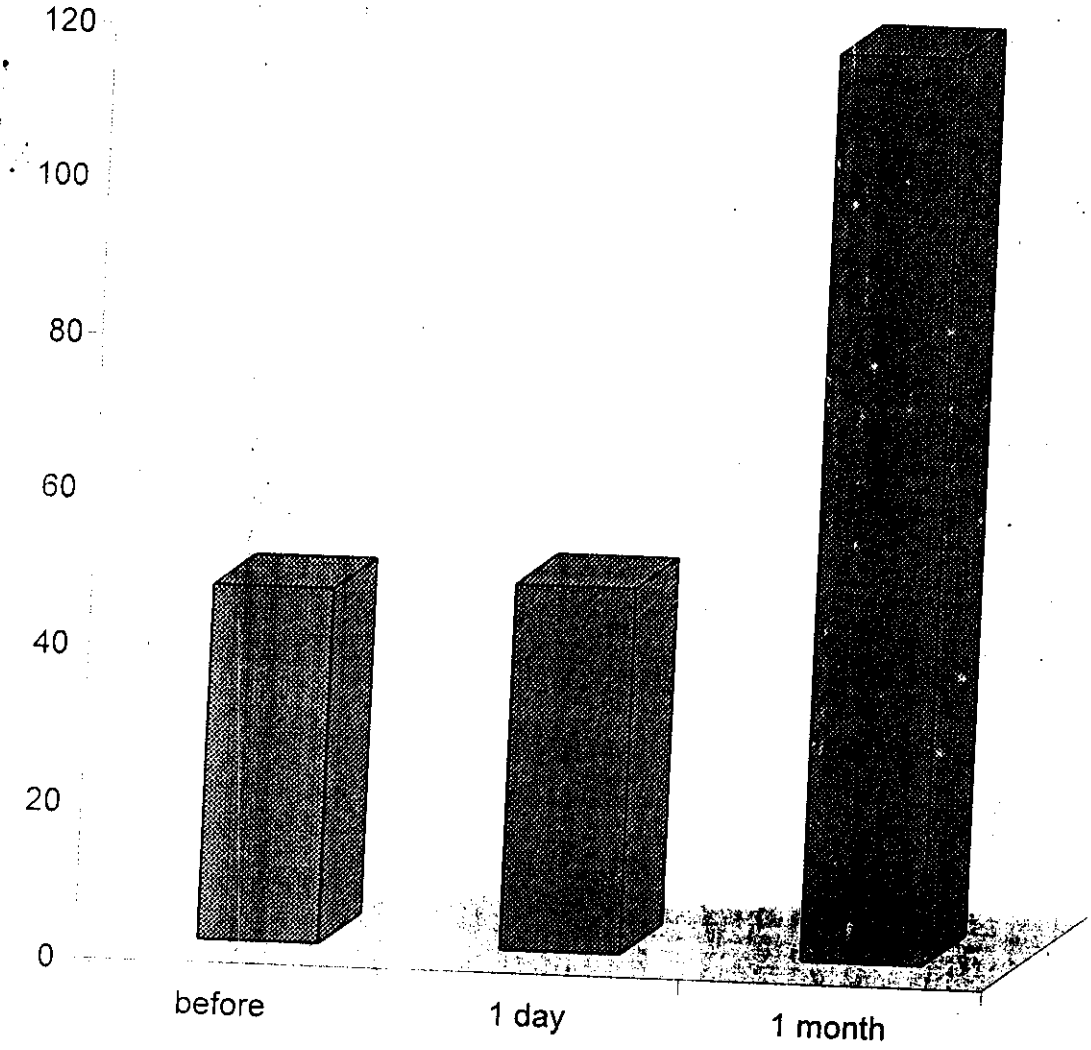


Table (15): **Comparison between mean percentage of blast cells in peripheral blood in the studied cases before, 1 day and 1 month after start of therapy.**

Blast cell Phase	Range (%)	Mean ± SE (%)	Paired t-value	P
Before	39-97	80.603± 2.58		
1 day	33-90	74.033± 2.54	6.452	<0.001
Before	39-97	80.603± 2.58		
1 month	0-16	1.069± 0.74	31.7402	<0.001
1 day	33-90	74.033 ± 2.54		
1 month	0-16	1.069 ± 0.74	29.1145	<0.001

This table shows:

- There was highly significant decrease in mean percentage of blast cells one day after therapy than before start of therapy.
- There was highly significant decrease in mean percentage of blast cells one month after therapy than before start of therapy.
- There was highly significant decrease in mean percentage of blast cells after end of induction therapy than one day after therapy.

Fig. (14) : Comparison between mean blast cells percentage in peripheral blood in the studied cases before, 1 day and 1 month after start of therapy.

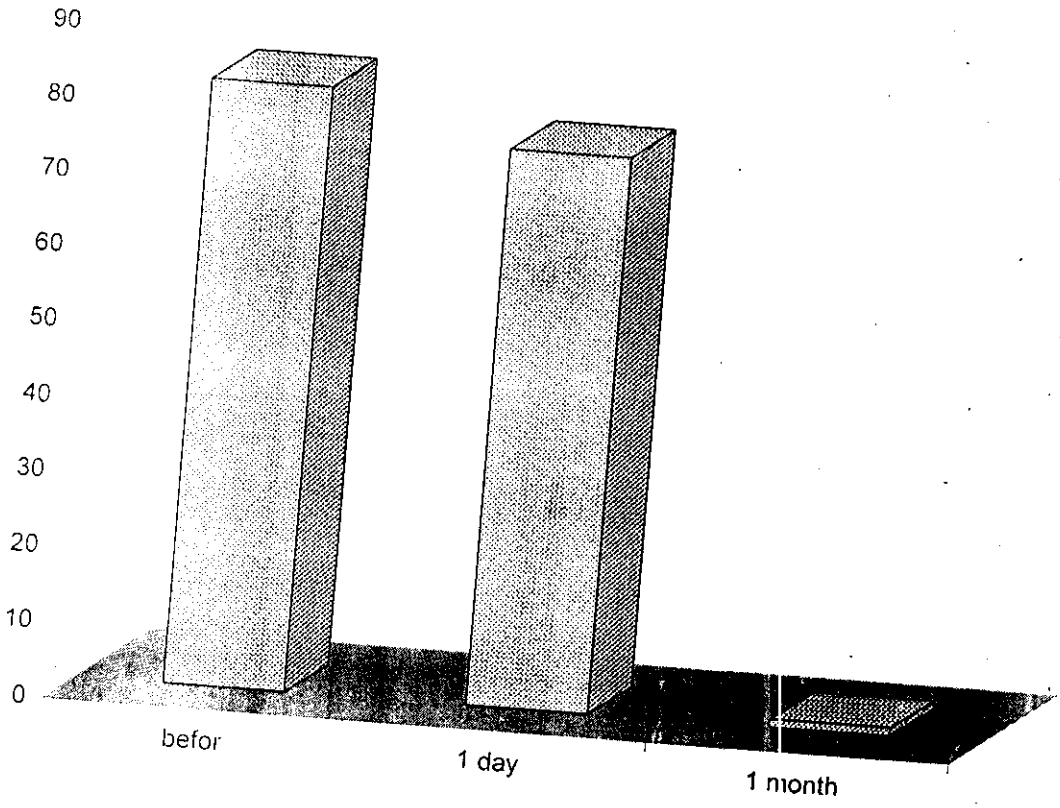


Table (16): **Comparison between mean bone marrow blast cells percentage in studied patients at diagnosis and after the end of induction therapy.**

Blast cells phase	Range (%)	Mean ± SE (%)	t-value	P
Before	25-97	84.833 ± 2.93	23.615	<0.001
1 month	0-27	2.074 ± 1.18		

This table shows:

- There was highly significant decrease in mean percentage of blast cells in bone marrow after end of induction therapy than at diagnosis.

Fig. (15) : Comparison between mean bone marrow blast cells percentage in studied patients at diagnosis and after end of induction therapy.

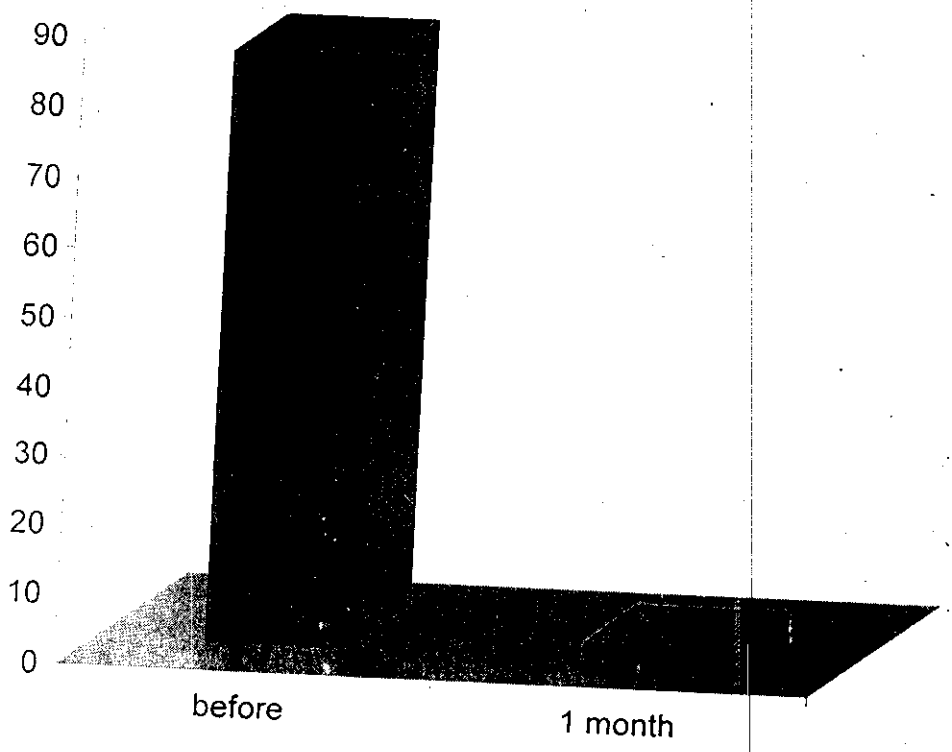


Table (17): **Comparison between mean percentage of apoptotic cells in the studied cases before therapy and 1 day after induction therapy.**

The variable \ The phase	Before (n=30) Mean ± SE	After 1D (n=30) Mean ± SE
Percent of apoptotic cells	0.6 ± 0.18	23.833 ± 1.55
t value	-13.611	
P	< 0.001	

This table shows:

- There was significant increase in mean percentage of apoptotic cells 1 day after induction therapy than before therapy.

Fig. (16) : Comparison between mean percentage of apoptotic cells in the studied cases before therapy and 1 day after induction therapy.

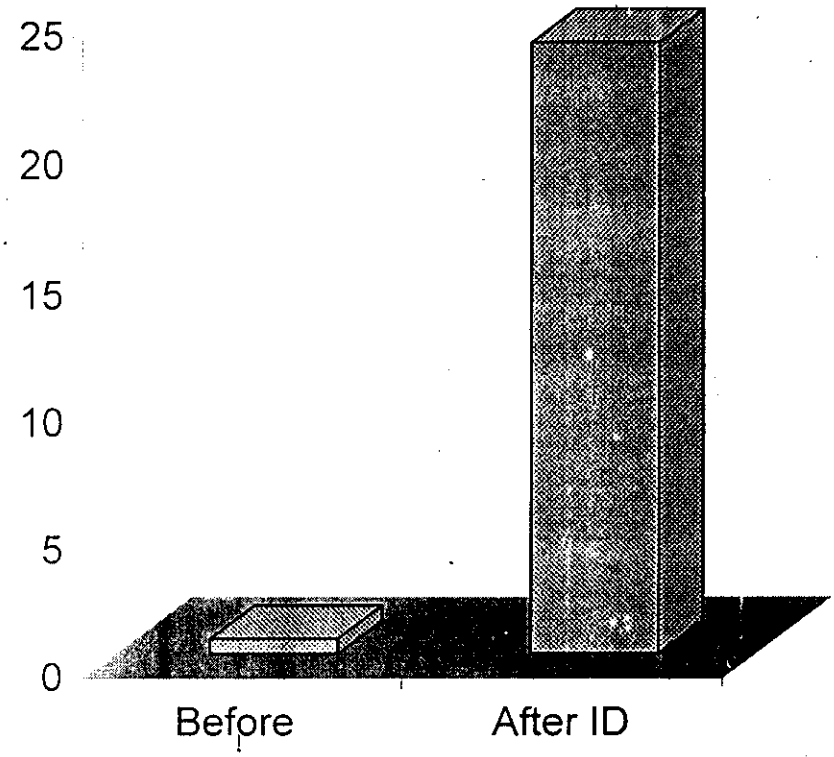


Table (18): Correlation between percentage of apoptotic cells & other prognostic variables.

Apoptosis / Other variables	r	P
Age	0.2332	>0.05
TLC	-0.1526	> 0.06
Hb	-0.1005	>0.05
Platelets	-0.0957	> 0.05
Blast cells	-0.4661	<0.05
Fas	-0.5443	< 0.05

This table shows:

- There was no significant correlation between percentage of apoptotic cells and age, TLC, Hb level and platelets count.
- There was significant negative correlation between percentage of apoptotic cells and percentage of blast cells in peripheral blood and sFas level.

Table (19): **Comparison between mean serum level of sFas in patients of ALL before therapy and control group.**

sFas / Group	Range (ng/ml)	Mean ±SE (ng/ml)	t	P
Case before ttt (n=30)	2.4 – 14	7.79 ± 0.74	4.685	<0.001
Control (n = 10)	1 – 2.1	1.62 ± 0.12		

This table shows:

- There was highly significant increase of serum sFas level in patients in comparison to control group.

Fig. (17) : Comparison between mean serum levels of sFas in patients of ALL before Therapy and control group

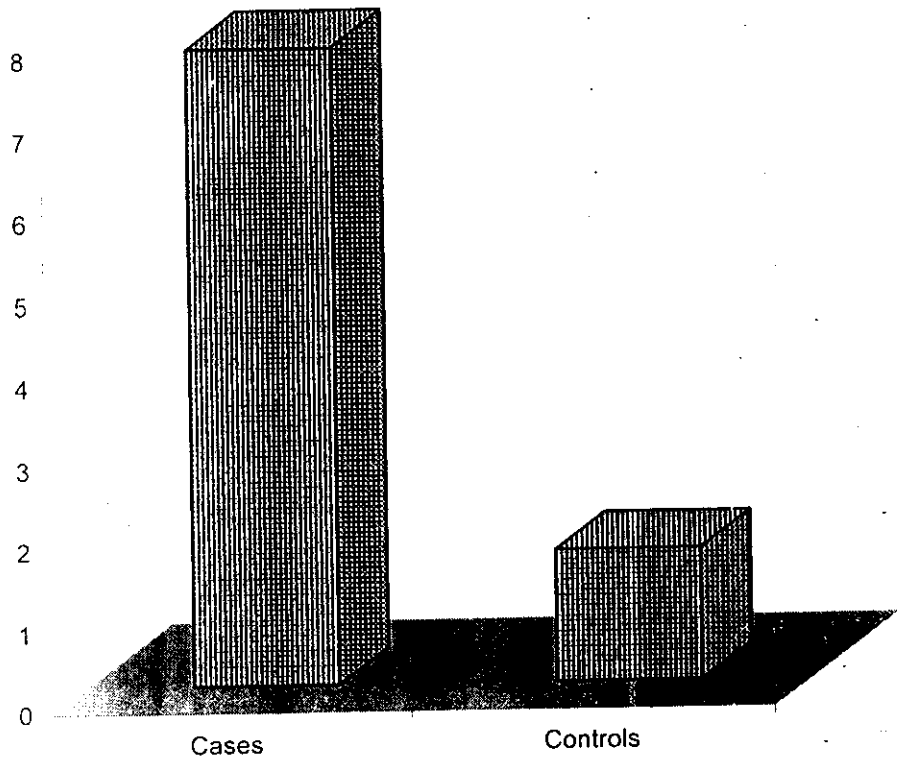


Table (20): **Comparison between mean serum levels of sFas in the studied cases before, 1 day and 1 month after start of therapy.**

sFas / Phase	Range (ng/ml)	Mean ± SE (ng/ml)	t-value	P
Before	2.4-14	7.79 ± 0.74	0.422	>0.05
1 day	2-13.3	6.69 ± 0.70		
Before	2.4-14	7.79 ± 0.74	6.823	<0.001
1 month	1-13.2	2.756 ± 0.53		
1 day	2-13.3	6.69 ± 0.70	6.035	<0.001
1 month	1-13.2	2.756 ± 0.53		

This table shows :

- There was no significant difference between mean of serum sFas level before and after one day of induction therapy.
- There was highly significant decrease in mean of serum sFas level after one month of induction therapy than before therapy.
- There was highly significant decrease in mean of serum sFas level after 1 month of induction therapy and 1 day after therapy.

Fg. (18) : Comparison between the mean serum levels of sFas in the studied cases before treatment,1 day and 1 month after start of therapy.

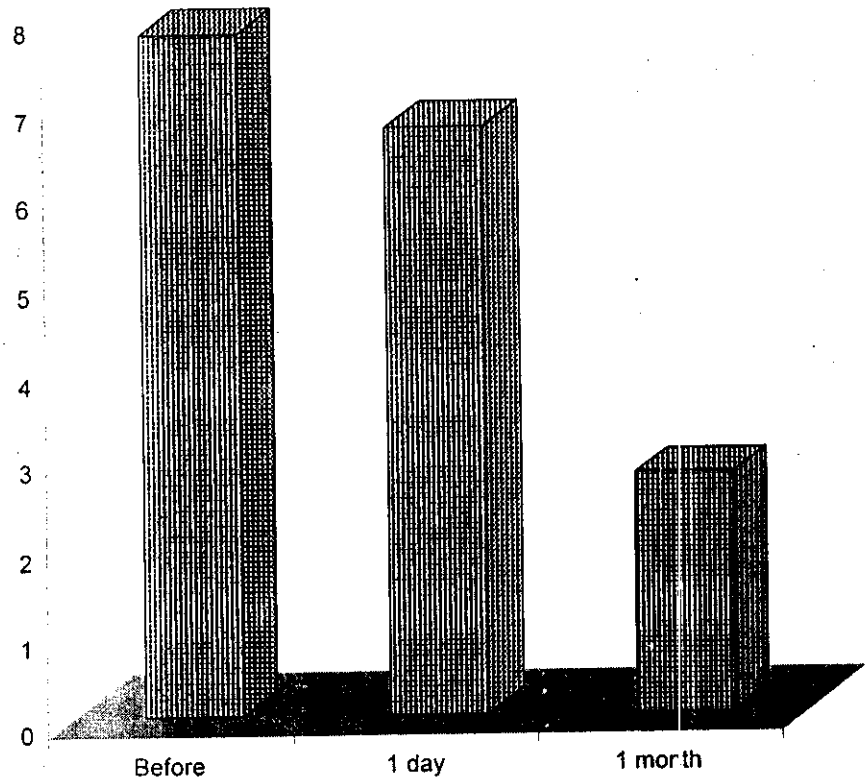


Table (21): **Distribution of 30 children with ALL according to risk factors.**

Parameters	High risk group		Low risk group	
	No.	%	No.	%
Patients data				
* Age	5	16.67	25	83.33
* Sex	19	63.33	11	36.67
Clinical presentation:				
* Organomegaly	16	53.33	14	46.67
Hematological data				
* Hb level gm/dl	3	10	16	53.33
* TLC x 10^3 /cmm	16	53.33	6	20
* Platelet x 10^3/cmm	10	33.33	2	6.67
Morphological classification				
* L1	-	-	4	13.33
* L2	25	80	-	-
* L3	1	6.67	-	-
Immunophenotyping				
* Early pre B ALL	-	-	5	16.67
* Pre B ALL	-	-	14	46.67
* B ALL	4	13.33	-	-
* T ALL	7	23.33	-	-

High risk group characterized by:

- Male.
- Age less than 1 year or more than 10 years.
- Haemoglobin more than 10 gm/dl.
- Platelets count less than 30 x 10^3/cmm.
- TLC more than 50 x 10^3/cmm.
- Hepatosplenomegaly and lymphadenopathy.
- L2 or L3 according FAB classification.
- B or T-cell type according to immunophenotyping.

Low risk group characterized by:

- Female.
- Age between 1-10 years.
- Haemoglobin less than 7 gm/dl.
- Platelets count more than 100 x 10^3/cmm.
- TLC less than 10 x 10^3/cmm.
- Absence of organomegally.
- L1 according to FAB classification.
- Early pre B or pre B according to immunophenotyping.

(Whittock and Gaynon, 1999)

Table (22): **Comparison between serum sFas level in low and high risk group ALL children.**

sFas (ng/ml) / Risk factors	Low risk Mean ± SD	High risk Mean ± SD	t	P
Age	7.117 ± 4	10.417 ± 2.623	1.697	<0.05*
Sex	6.982 ±3.798	8.258 ± 4.229	-0.667	>0.05
Tumour burden	8.40 ± 4.379	7.591 ± 5.057	0.431	>0.05
Haemoglobin	6.8 ± 3.9	7.591±5.16	0.377	>0.05
Platelets	9.45 ± 6.29	7.32 ± 3.57	0.465	>0.05
TLC	4.33 ± 2.56	10.25 ± 3.73	2.079	<0.05*
LDH	4.763 ± 1.572	11.25 ± 3.116	1.117	<0.001*
IPT	6.047 ± 3.413	10.8 ± 3.324	2.453	<0.05*
FAB	6.9 ± 5.06	7.926 ± 3.986	-0.427	>0.05

This table shows:

* There was a significant increase in serum Fas level in high risk group than low risk group regarding age, TLC, LDH and IPT.

* There was no significant difference in serum Fas between high and low risk group regarding to sex,haemoglobin, platelets count and FAB classification.

Table (23): **Correlations between serum sFas level & prognostic factors at diagnosis.**

sFas / Prognostic factor	r	P
Age	0.1029	>0.05
TLC	0.728	<0.05*
Hb	0.2043	>0.05
Platelets	0.0875	>0.05
Blast cells	0.2937	> 0.05
LDH	0.7708	<0.05*

* Significant

This table shows:

- There were significance positive correlations between the serum sFas level and TLC, LDH.
- There was no significance correlations between the serum sFas level and age, platelet count,and blast cell count.