R E S U L T S

Results of the present study are tabulated from 1 to 16 and presented by figures 1-8.

Table 1: Presents relevant clinical as well as laboratory data of the 60 polytransfused patients.

Haematological results:

The mean value of haemoglobin in thalassaemics was (4.9 gm with min.3 gm and max. 9.5 gm) in the first sample and mean of Hb value at last sample was (5.5 gm with min. 2.4 and max. 11 gm). The mean value of haemoglobin in cases of malignancies was (9.7, min. 2.5 and max. 12 gm in the first sample and it was 9.8 gm with min. 4.5 and max 12.5 gm in the last sample). The mean value of Hb in cases of idiopathic thrombocytopenic purpura (I.T.P.) was 9.6 gm in the first sample and 12.1 gm in the last sample and that of sickle cell anaemia was 5.5 gm and 7 gm and of hypoplastic anaemia was 5 gm and 9 gm in the first and last samples respectively.

Clinical features of the patients:

- The size of the liver was increased in all cases except in 4 cases in the first sample and one case in the last sample. The liver showed no increase in size in 2 cases. The increase in size was ranged between 1 cm - 10 cm. one case of thalassaemic reached 18 cm.

- In the 60 polytransfused patients, the spleen was removed in (5) patients and was not felt in (7) patients, It was increased in size in (48) patients.

- History of jaundice, increased serum bilirubin and transaminases were detected in (21) cases. In (6) cases giving history of jaundice and increased bilirubin and transaminases, HBsAg and anti-delta were not detected. from these 21 patients, 15 cases were HBsAg positive and 10 cases were anti-delta positive. On the other hand, in 10 cases (5 with HBsAg +ve and 5 with HBsAg +ve and anti-delta positive), there was no history of jaundice or presentation with jaundice.

Virological findings:

- The No. of cases with positive HBsAg in the first and last samples was 25 cases, and the number of cases positive for anti-delta was 15 cases. Only one case was positive for delta antigen, the case was male, thalassaemic, aged 4 years, delta antigen was detected in the first sample and disappeared in the last sample, where delta antibody appeared.

- The mean of age of cases with HBsAg positive was 4.3 with min. 1.5 and max. 10 years. The mean of age in cases with positive anti-delta was 4.7 with min. 1.5 and max. 10 years.

Management of patients:

The therapy beside blood transfusions was oral treatment in the form of folic acid tablets in cases of anaemias, thalassaemia, steroids and vessel wall stabilizers in idiopathic thrombocytopenic purpra (I.T.P.). In cases of leukemia and other malignancies, it was I.M., I.V., injections and I.V. drip of chemotherapy beside the oral treatment and blood transfusions. The duration of treatment ranged between 1 m - 10 years.

- The No. of blood transfusions ranged between 2-110.

Table 2: Presents the analysis of data of the 60 normal control cases (5)cases were positive for HBsAg, and no positivity for delta antigen or anti delta was apparent.

From Table (3) and Fig. (1): It was seen that 3 cases of the 27 cases of thalassaemia were HBsAg positive (11.1%) and one case from 29 cases of malignancies was positive for HBsAg (3.5%) and no positivity was detected in the miscl. group. The total incidence of positivity for HBsAg in the sera of first sample was 4 cases (6.7%) among the polytransfused groups.

From Table (4) and Fig. (1): The total incidence of positivity for HBsAg was (41.7%), 25 patients in the last serum sample among whole group of polytransfused patients. 12 cases of (27) thalassaemics (44.4%) and 12 cases of (29) patients with malignancies (41.4%) and one case of the miscl. group which was sickle cell anaemia (25%).

From Table (5): It is clear that the total incidence for anti-delta in the polytransfused groups was 60% (15 cases). 8 cases were positive for anti-delta of the 12 cases positive for HBsAg among thalassaemics (66.7%), and 7 cases were positive for anti-delta among the group of malignancies (58.3%), no positivity for delta antibody was seen in the miscl.group.

Table (6) and Fig . (2): showed the relation between hepatitis B infection and delta hepatitis infection. The relation was highly significant as 60% of HBsAg carriers were anti-delta positive.

From Tables (7), (8): there was no statistical significant difference between males and females as regards HBV and delta hepatitis infections. It is found that 39% of males and 47.4% of females are infected with HBV. On the other hand 19.5% of males and 36.8% of females are infected with delta hepatitis.

From Tables(9), (10) and Fig.(3): There was significant relation between HBsAg and antidelta positivity, and jaundice, increased bilirubin and serum transaminases. It was seen that from 21 cases with jaundice and increased bilirubin and serum transaminases 15 cases (71.4%), were HBsAg positive and 10 cases (66.7%) were anti-delta positive. The ratio of icteric to non icteric cases was 3:2 in cases of HBsAg and

2:1 in cases of delta hepatitis associated hepatitis B infection.

From Table (11), Fig.4: It is apparent that the mean increase in size of the liver in cases +ve for anti-delta was 4.27 cm, where it was 2.8 cm in those with sera negative for anti-delta. The difference was statistically significant. It was seen that there was no effect of delta hepatitis infection on causing splenomegaly.

Fig. 5: represents the relation between the No. of blood transfusions and HBsAg and anti-delta prevalence.

From Tables (12), (13) and Fig. 6: It is seen that there was significant statistical difference between cases with HBsAg and anti-delta positive and those with HBsAg and anti-delta negative cases as regards the duration of blood transfusions. The mean duration of blood transfusions was 2.98 years in case of HBsAg carriers and 3.73 years in case of delta hepatitis infection.

From Tables (14), (15) and Fig. 7: It is seen that cases of HBsAg positive taking amount of blood transfusions with mean 7086 c.c. and the mean of the amount of blood transfusions in cases with anti-delta positive has 9610 c.c. the relation between the amount of blood transfused and hepatitis B and delta hepatitis infection was significant.

Table (16) and Fig. 8: showed the comparison between 60 normal cases and 60 cases receiving blood transfusions. It was apparent that there was high statistical significant difference between the two groups in the incidence of hepatitis B and delta hepatitis infections.

Table 1: Analysis of clinical and laboratory data of cases of the study.(60 polytransfused cases).

Serial No.	Name	Sex	Age	Diagn.	Date of sample	Liver cm.	Spleen cm	Hb gm	H.of jaundice	Liver F.tests	HBs Ag.	∫Ag	∫Ab	Type of therapy	Duration	History of blood transfusion No.	Vol.
1	A.A.	♂	7ys.	Hodgkin's Lymphoma	1st 4-85	4	5	6.5	-ve	-ve	-ve	-ve	-ve	I.M.,I.V. injections	1m	8	250
					last 4-86	8.5	11	7.5			-ve	-ve		I.V. drip oral	1.1y	12	
2	A.Gh.	♂	13ys.	ALL.	1st 11-84	not felt	not felt	11	-ve	-ve	-ve	-ve	-ve	I.M.I.V. injections	1 y	4	250
					last 1-86	2	1	12.5			-ve	-ve		I.V.drip oral	2.3y	8	
3	N.B.	♀	5ys	ALL	1st 1-85	3	not felt	11	-ve	-ve	-ve	-ve	-ve	I.M.inj. I.V.inj.	1m	3	200
					last 2-86	5	1.5	9.5			-ve	-ve		I.V.drip	1.2y	5	
4	H.F.	♂	3ys	H.	1st 2-85	5	10	6	-ve	-ve	+ve	-ve	-ve	Oral	6m	15	150
					last 2-86	6	14	3.2			+ve	-ve			1.5ys.	35	
5	A.N.	♀	7ys	H.	1st 9-84	4	5	5	+ve	+ve	-ve	-ve	-ve	Oral	2ys	20	250
					last 1-86	7	6	4.5			-ve	-ve			3.2ys.	40	
6	A.M.	♂	4ys	H	1st 10-85	4	22	5.2	+ve	+ve	+ve	+ve	+ve	Oral	2ys	80	150
					last 2-86	10	25	8			+ve	-ve			3.4ys.	100	

ALL: Acute lymphoblastic leukemia.
H : Thalassaemia

♂ : Male
♀ : Female.

Table 1 Cont.

7	Y.A.	♂	10ys	H.	1st 8-84	4	remov.	4.8	+ve	+ve	+ve	-ve	+ve	Oral	9ys.	100	250
					last 1-86	9	remov.	4.5			+ve	-ve			10ys.	130	
8	H.A.	♀	6ms	H.	1st 8-84	3	2	5.5	-ve	-ve	-ve	-ve	-ve	Oral	1m	2	70
					last 10-85	4	7	4.9			-ve	-ve			1.3y	7	
9	R.M.	♂	3.5ys.	ALL	1st 8-84	4	10	3.8	+ve	+ve	+ve	-ve	+ve	I.M.I.V. I.V.drip	6ms.	20	150
					last 10-85	8	22	4.5			+ve	-ve		Oral	1.8ys.	50	
10	S.R.	♀	1.5ys.	H.	1st 1-85	3	1	5.4	-ve	-ve	-ve	-ve	-ve	Oral	1y	7	100
					last 2-86	15	16	5.5			+ve	-ve			2ys.	35	
11	S.M.	♂	4.5ys.	H	1st 1-85	2	2	7	-ve	-ve	-ve	-ve	-ve	Oral	6ms	3	100
					last 1-86	4	6	10			-ve	-ve			1.5ys.	13	
12	M.N.	♀	3.5ys.	H.	1st 8-84	4	9	3.9	-ve	-ve	-ve	-ve	-ve	Oral	3ys	50	150
					last 10-85	5	remov.	4.5			-ve	-ve			4.2ys.	70	
13	M.M.	♀	10ys.	Sickle cell anemia	1st 8-84	2.5	3.5	5.5	+ve	+ve	-ve	-ve	-ve	Oral	2 ms.	3	200
					last 1-86	5	5	7			+ve	-ve			1.5ys.	20	
14	H.A.	♂	5ys.	H.	1st 10-84	6	8	5.3	+ve	+ve	-ve	-ve	-ve	Oral	2ms	3	150
					last 1-86	10	18	5.7			+ve	-ve			1.4y	20	

Table 1 Cont.

15	A.M.	♂	4ys.	H.	1st 1-85	4	4	4.8	+ve	+ve	-ve	-ve	+ve	Oral	4ms	55	150
					last 1-86	8	16	5.7			+ve	-ve			1.4ys.	110	
16	M.S.	♂	3.5ys.	I.I.P.	1st 1-85	3	not felt	9.4	-ve	-ve	-ve	-ve	-ve	Oral	3ms	2	100
					last 1-86	3	not felt	12			-ve	-ve			1.3ys.	2	
17	M.A.	♂	2ys	H.	1st 12-84	2	3	5.2	+ve	+ve	-ve	-ve	-ve	Oral	5m	11	120
					last 12-85	4	10	4.5			-ve	-ve			1.5ys	40	
18	M.T.	♂	4.5ys.	H.	1st 1-85	9	9	4.5	+ve	+ve	-ve	-ve	-ve	Oral	1.5ys.	6	150
					last 1-86	10	remov.	8			-ve	-ve			2.5ys.	18	
19	A.S.	♂	5ys.	H.	1st 1-85	4	4	4.5	-ve	-ve	-ve	-ve	-ve	Oral	2ys.	14	160
					last 1-86	8	remov.	8.4			-ve	-ve			3ys.	31	
20	M.A.	♀	7y	H.	1st 1-85	7	18	3.9	-ve	-ve	-ve	-ve	-ve	Oral	4ms	5	150
					last 2-86	8	22	5.9			-ve	-ve			1.5ys.	20	
21	M.B.	♀	12ys.	Hypoplastic anemia	1st 2-85	2	not felt	5	+ve	+ve	-ve	-ve	-ve	Oral	2ms.	6	200
					last 2-86	4	5	9			-ve	-ve			1.2ys.	10	
22	M.M.	♀	7ys	H.	1st 1-85	6	14	5.3	-ve	-ve	-ve	-ve	-ve	Oral	2ys.	25	160
					last 1-86	8	20	6.3			-ve	-ve			3ys.	40	

Table 1 Cont.

23	N.F.	♀	2.5ys.	retino-blast.	1st 2-85	not felt	not felt	11	+ve	+ve	-ve	-ve	+ve	I.M. inj.	2ys	4	150
					last 2-86	1	not felt	8			+ve	-ve		I.V. inj. I.V.drip	3ys.	16	
24	A.S.	♂	1.5ys.	ALL	1st 2-85	2	2	7.5	+ve	+ve	-ve	-ve	+ve	I.M. inj.	6ms	8	100
					last 2-86	3	5	8.5			+ve	-ve		I.V. inj. I.V.drip oral	1.5ys.	15	
25	H.M.	♀	10ys.	ALL	1st 1-85	2	not felt	11.2	+ve	+ve	-ve	-ve	+ve	I.V.drip	9ys	20	250
					last 1-86	4	not felt	9.5			+ve	-ve		I.M. inj. I.V. inj.	10ys.	30	
26	R.H.	♂	2.5ys.	H.	1st 1-85	2	4	5	-ve	-ve	-ve	-ve	+ve	oral	1y	18	100
					last 1-86	18	20	5.5			+ve	-ve			2ys	50	
27	R.M.	♀	2y	H	1st 12-84	5	11	5.2	-ve	-ve	-ve	-ve	-ve	Oral	1y	10	100
					last 12-85	8	14	4.7			-ve	-ve			2ys.	21	
28	W.M.	♂	4ys	H.	1st 1-85	6	16	3	-ve	-ve	-ve	-ve	-ve	Oral	2ys	20	150
					last 1-86	7	20	3.5			-ve	-ve			3ys	35	
29	W.R.	♀	4.5ys.	H.	1st 10-84	7	12	3.5	-ve	-ve	-ve	-ve	+ve	Oral	3ys	60	150
					last 10-85	10	remov.	3.5			+ve	-ve			4ys	110	

Table 1 Cont.

30	H.H.	♀	3.5ys.	H.	1st 2-85	5	8	3.7	-ve	-ve	-ve	-ve	+ve	Oral	2ys.	30	100
					last 2-86	7	10	2.8			+ve	-ve			3ys.	50	
31	Kh.M.	♂	1y	H.	1st 8-84	3	3	4.2	-ve	-ve	-ve	-ve	-ve	Oral	6ms	2	100
					last 10-85	5	4	6.3			-ve	-ve			1.8y	7	
32	Sh.A.	♂	6ms	H.	1st 1-85	5	3	4.5	-ve	-ve	-ve	-ve	-ve	Oral	2ms	2	70
					last 1-86	5	5	7.5			-ve	-ve			1.2ys.	14	
33	H.A.	♀	5ys	H.	1st 2-85	2	7	4.5	-ve	-ve	-ve	-ve	+ve	Oral	3ys	60	250
					last 2-86	7	12	4.4			+ve	-ve			4ys	75	
34	R.S.	♂	3.5ys.	H.	1st 1-85	7	15	4.5	-ve	-ve	-ve	-ve	-ve	Oral	6ms	10	100
					last 1-86	7	16	3.3			-ve	-ve			1.5ys.	20	
35	N.Sh.	♀	4ys.	H.	1st 12-84	5	4	3.3	-ve	-ve	-ve	-ve	+ve	Oral	3ms	7	250
					last 1-86	7	12	2.4			+ve	-ve			1.4ys.	20	
36	N.Sh.	♀	4.5ys.	ALL	1st 2-85	3	Not felt	9.2	+ve	+ve	-ve	-ve	+ve	I.M.inj. I.V.inj.	2ys.	4	250
					last 2-86	6	7	8			+ve	-ve		I.V.drip	3ys.	16	

Table 1 Cont.

37	Sh.A.	♂	4ys	ALL	1st 1-85	Not felt	Not felt	10	+ve	+ve	-ve	-ve	+ve	I.M. inj.	2ms.	4	250
					last 1-86	4	7	8			+ve	-ve		I.V. inj. I.V.drip	1.2ys.	12	
38	M.S.	♂	3.5ys.	H.	1st 2-85	5	13	4.2	+ve	+ve	-ve	-ve	-ve	Oral	1.5ys.	30	100
					last 2-86	6	16	5.9			+ve	-ve			2.5ys.	60	
39	Sh.S.	♀	4.5ys.	I.T.P.	1st 2-85	not felt	not felt	9.75	-ve	-ve	-ve	-ve	-ve	Oral	2ms	3	150
					last 2-86	not felt	not felt	12.2			-ve	-ve			1.2ys.	3	
40	A.M.	♂	5ys.	H.	1st 12-84	5	2	3.7	-ve	-ve	-ve	-ve	-ve	Oral	2m	2	150
					last 1-86	6	10	11			-ve	-ve			1.2ys.	13	
41	A.A.	♂	4.5ys.	ALL	1st 1-85	2	not felt	10	-ve	-ve	-ve	-ve	-ve	I.M. inj. I.V. inj.	2ms	10	250
					last 1-86	2	just palp.	10.2			-ve	-ve		I.V.drip	1.2ys.	20	
42	A.M.	♂	8.5ys.	Lymph sarcoma	1st 12-84	3	not felt	9.5	+ve	+ve	-ve	-ve	-ve	I.V. inj. I.V.drip	2ys	5	250
					last 1-86	5.5	2	9.75			+ve	-ve		I.M. inj.	3ys	10	
43	A.M.	♂	4.5ys.	ALL	1st 2-85	4	not felt	10	+ve	+ve	-ve	-ve	-ve	I.M. inj. I.V. inj.	1y	2	250
					last 2-86	5	just palp.	9			+ve	-ve		I.V.drip	2ys.	4	

Table 1 Cont.

44	A.H.	♂	1.5ys.	Wilms tumours	1st 10-84	Not felt	Not felt	10	-ve	- -ve	-ve	-ve	-ve	I.M.inj. I.V.inj.	2ms	2	100
					last 12-85	Not felt	Not felt	11				-ve	-ve	I.V.drip	1.4ys.	2	
45	A.E.	♂	10ys.	ALL	1st 2-85	not felt	not felt	11	+ve	+ve	-ve	-ve	-ve	I.V. inj. I.M. inj.	2ys.	10	250
					last 2-86	3	not felt	10.8				-ve	-ve	I.V.drip	3ys.	10	
46	H.A.	♂	2.5ys.	ALL	1st 1-85	3	just felt	7.5	- ve	-ve	-ve	-ve	-ve	I.V.inj. I.M.inj.	2ms	3	200
					last 1-86	3	just felt	11.4				+ve	-ve	I.V.drip	1.2ys.	5	
47	H.H.	♂	3y	ALL	1st 1-85	2	not felt	10	-ve	-ve	-ve	-ve	-ve	I.V.inj. I.M.inj.	1m	4	250
					last 1-86	2	just felt	10.8				-ve	-ve	I.V.drip	1y	7	
48	H.F.	♂	6ys.	ALL	1st 12-84	7	not felt	10	+ve	+ve	-ve	-ve	-ve	I.V.inj. I.M.inj.	6ms.	2	250
					last 11-85	6	not felt	7				-ve	-ve	I.V.drip	1.5ys.	16	
49	M.M.	♂	6.5ys.	ALL	1st 8-84	3	1	11	+ve	+ve	+ve	-ve	-ve	I.M. inj. I.V. inj.	2ms	4	250
					last 12-85	5.5	2.5	12.2				+ve	-ve	I.V.drip	1.4ys.	16	

Table 1 Cont.

50	M.N.	♂	8ys.	ALL	1st 12-84	4	Just felt	12	-ve	-ve	-ve	-ve	-ve	-ve	I.M. inj.	2ys	4	250
					last 1-86	5.5	2.5	10.7				-ve	-ve		I.V. inj.	3ys.	10	
															I.V.drip			
51	M.A.	♂	3.5ys.	ALL	1st 1-85	3	not felt	10.5	-ve	-ve	-ve	-ve	-ve	-ve	I.M. inj.	1y	2	250
					last 1-86	5.5	2.5	10				-ve	-ve		I.V. inj.	2ys	5	
															I.V.drip			
52	M.M	♂	9ys.	ALL	1st 2-85	1	not felt	12	-ve	-ve	-ve	-ve	-ve	-ve	I.M. inj.	3ys	10	250
					last 2-86	4	2.5	9.75				+ve			I.V. inj.	4ys.	15	
															I.V.drip			
53	M.G.	♂	7.5ys.	ALL	1st 1-85	3	not felt	10.5	-ve	-ve	-ve	-ve	-ve	-ve	I.M. inj.	1y	2	250
					last 1-86	3	1	10.2				-ve	-ve		I.V. inj.	2ys	10	
															I.V.drip			
54	M.A.	♂	5.5ys.	ALL	1st 1-85	2	just felt	8.1	-ve	-ve	-ve	-ve	-ve	-ve	I.M. inj.	1m	5	250
					last 1-86	not felt	not felt	12				-ve	-ve		I.V. inj.	4y	7	
															I.V.Drip			
55	M.H.	♂	9ys.	ALL	1st 1-85	1	4	9.75	-ve	-ve	-ve	-ve	-ve	-ve	I.M. inj.	1y	4	250
					last 3-86	2	2	10.8				-ve	-ve		I.V. inj.	2ys	5	
															I.V.drip			

Table 1 Cont.

56	W.H.	♀	12ys.	ALL	1st 12-84	2	not felt	10.8	-ve	-ve	-ve	-ve	-ve	I.M.inj. I.V.inj.	1y	2	250
					last 1-86	3	Just felt	11.3				-ve	-ve	I.V.drip	2ys	8	
57	A.M.	♀	9ys.	Ch. myloid leukemia	1st 7-85	3	1	11	-ve	-ve	-ve	-ve	-ve	I.M.inj. I.V.inj.	2ms	2	250
					last 2-86	3	2	10.5				-ve	-ve	I.V.drip	1.2ys.	6	
58	A.M.M.	♂	3ys.	ALL	1st 3-85	2	not felt	10	-ve	-ve	-ve	-ve	-ve	I.M.inj. I.V.inj.	5ms	2	200
					last 2- 86	3	2	10.5				-ve	-ve	I.V.drip	1.4ys.	4	
59	A.H.	♂	15ys	ALL	1st 2-85	3	not felt	11.5	-ve	-ve	-ve	-ve	-ve	I.M.inj. I.V.inj.	2ms	1	250
					last 2-86	2	4	9.75				-ve	-ve	I.V.drip	1.2ys.	4	
60	M.A.A.	♂	5ys.	ALL	1st 2-85	1	not felt	10.5	-ve	-ve	-ve	-ve	-ve	I.M.inj. I.V.inj.	4ys	15	250
					last 2-86	2	just felt	10.				+ve	-ve	I.V.drip	5ys	20	

Table 2: Analysis of the normal control cases for their HBsAg and δ Ag and δ Ab. in their sera.

Age group	No. of cases	HBsAg +ve	HBsAg -ve	δ Ag +ve	δ Ag -ve	δ Ab +ve	δ AL -ve
6ms-2ys	16	1	15	-	16	-	16
	♂ 9	1	8	-	9	-	9
	♀ 7	-	7	-	7	-	7
2-5 ys.	28	2	26	-	28	-	28
	♂ 15	1	14	-	15	-	15
	♀ 13	1	12	-	13	-	13
5-10ys.	11	1	10	-	11	-	11
	♂ 6	1	5	-	6	-	6
	♀ 5	-	5	-	5	-	5
10-15 ys	5	1	4	-	5	-	5
	♂ 2	-	2	-	2	-	2
	♀ 3	1	2	-	3	-	3
Total	60	5	55	0	60	0	60
Percentage	100%	8.3%	91.7%	0	100%	0	100%

* HBsAg was detected by a commercial ELISA kit.

* Delta antigen was dected by enzyme-immunoassay using commercial ELISA kit.

* Anti-delta was detected by enzyme-immunoassay using commercial ELISA kit.

Table 3: HBsAg in serum from polytransfused infants and children at the beginning of the study (in the first sample).

Disease	No. of cases	Serum HBsAg +ve	Serum HBsAg -ve	HBsAg % in the disease category
Thalassemia major	27	3	24	11.1 %
	♂ 17	3	14	
	♀ 10	-	10	
Malignancies	29	1	28	3.5 %
	♂ 23	1	22	
	♀ 6	-	6	
Misc. group	4	-	4	0
I.T.P., sickle cell anaemia Hypoplastic a.	♂ 1	-	1	
	♀ 3	-	3	
Total No. of cases	60	4	56	6.7%

HBsAg detected by a commerical ELISA kit.

Table 4: HBsAg in serum from polytransfused infants and children at the end of twelve months follow up.

Disease	No. of cases	Serum HBsAg +ve	Serum HBsAg -ve	HBsAg % in the disease category.
Thalassaemia major	27	12	15	44.4%
	♂ 17	7	10	
	♀ 10	5	5	
Malignancies	29	12	17	41.4%
	♂ 23	9	14	
	♀ 6	3	3	
Misc. group I.T.P., sickle cell a., Hypo-plastic a.	4	1	3	25%
	♂ 1		1	
	♀ 3	1	2	
Total No. of cases.	60	25	35	41.7%

HBsAg detected by a commercial ELISA kit.

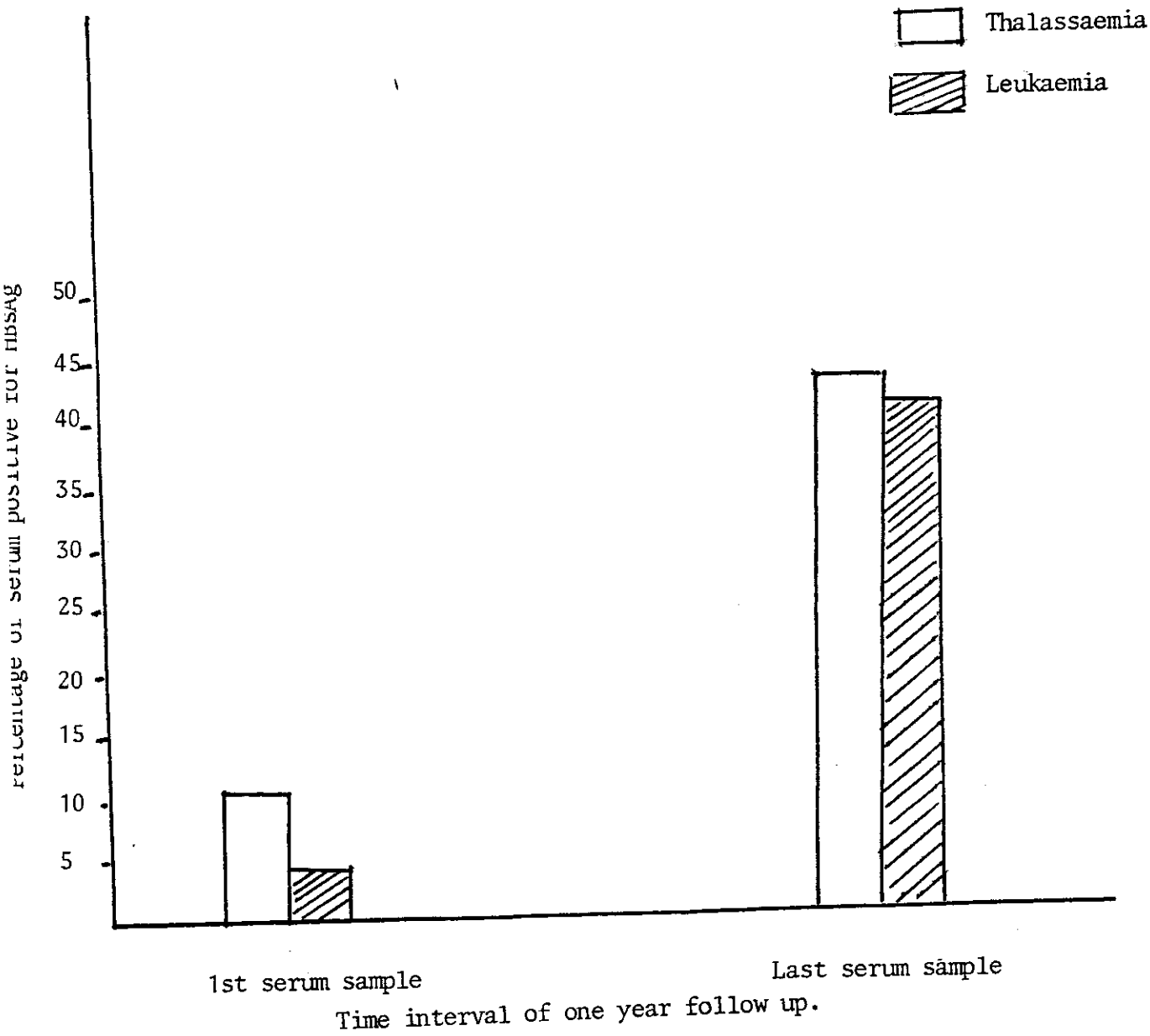

Fig.1: Comparison of 60 sera from polytransfused patients in the first serum sample and last serum sample for the incidence of HBsAg.

Table 5: Anti-Delta in serum of last sample for 60 poly-transfused patients of the study.

Disease	No. of cases +ve for HBsAg	Anti-delta +ve	Anti-delta -ve	Anti-delta % in category of disease
Thalassaemia major	12	8	4	66.7 %
	♂ 7	4	3	
	♀ 5	4	1	
Malignancies	12	7	5	58.3%
	♂ 9	4	5	
	♀ 3	3	-	
I.T.P., sickle cell a. Hypoplastic a.	1	-	1	0 %
	♂ -	-	-	
	♀ 1	-	1	
Total No of cases	25	15	10	60%

Anti-Delta was detected by an ELISA kit.

Table 6: Relation between chronic hepatitis B-sAg serum carrier and delta hepatitis virus infection in 60 polytransfused patients at the end of a one year follow-up.

HBsAg	No. of cases	δ Ab+ve	δ Ab-ve
+ve	25	15 60%	10 40%
-ve	35	0 0	35 100%
Total	60	15	45

$X^2 = 24.8 \quad P < 0.001$

The relation is highly significant.

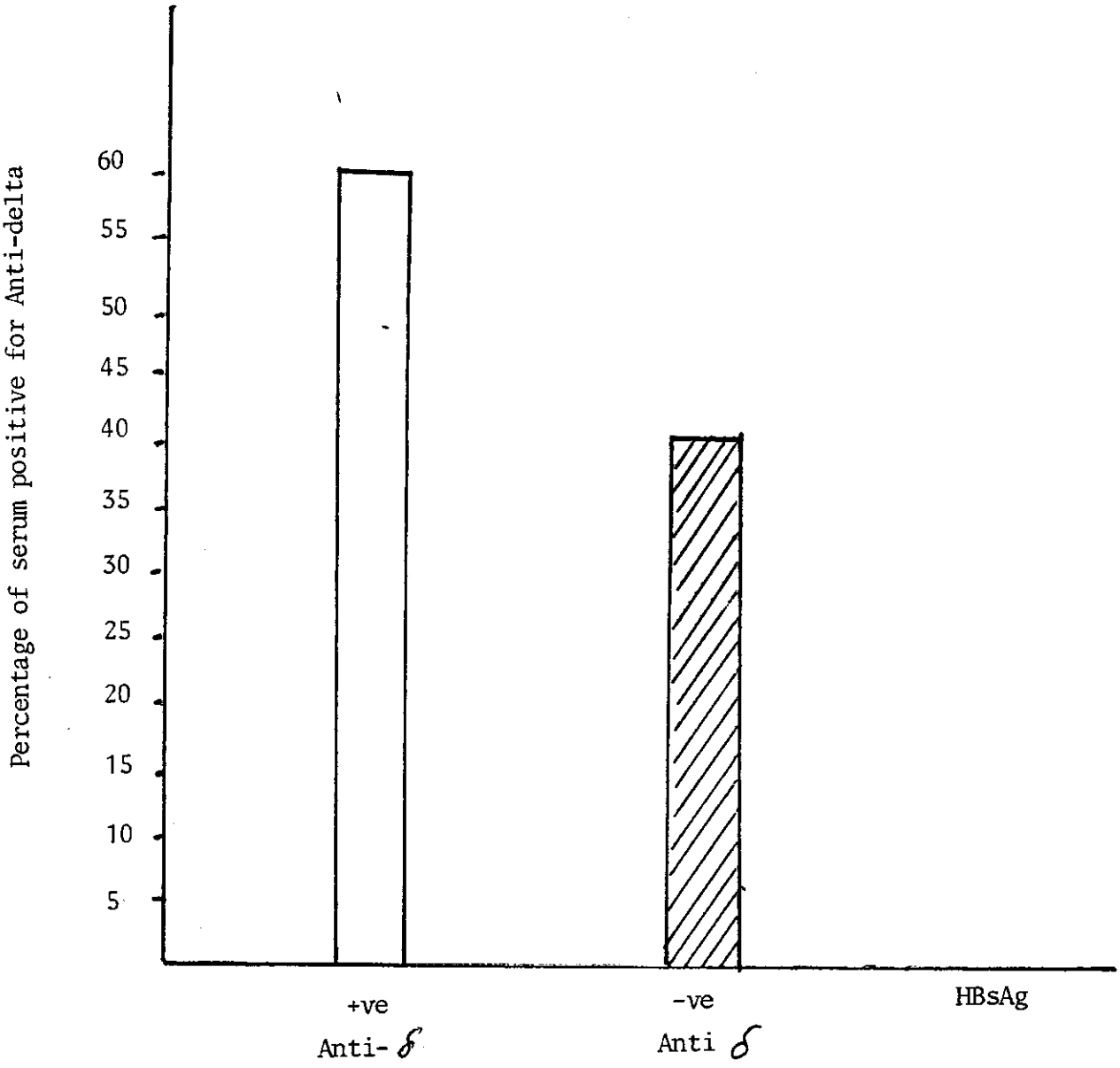

Fig.2: Relation between chronic hepatitis B surface Ag serum carrier and delta virus hepatitis infection in 60 polytransfused patients at the end of a one year follow-up.

Table 7: Correlation of sex and chronic hepatitis B surface antigenaemia in 60 polytransfused patients.

Sex	No. of cases	HBsAg+ve	HBsAg -ve
♂	41	16	25
		39%	61%
♀	19	9	10
		47.4%	52.7%
Total	60	25	35

$X^2 = 0.37 \quad P > 0.05$

(The difference is statistically not significant

Table 8: Correlation of sex and anti-delta in sera from 60 polytransfused patients.

Sex	No. of cases	δ Ab+ve	δ Ab -ve
♂	41	8	33
		19.5%	80.5%
♀	19	7	12
		36.8%	63.2%
Total	60	15	45

$X^2 = 0.19 \quad P > 0.05$

The difference is statistically insignificant.

Table 9: Association of hepatitis B surface antigenaemia and the level of serum bilirubin and transaminases of patients presented with jaundice among the 60 polytransfused patients.

Serum bilirubin and Transaminases	No. of cases	HBsAg +ve	HBsAg-ve
Increased	21	15	6
		71.4%	28.6%
Not affected	39	10	29
		25.6%	74.4%
Total	60	25	35

$X^2 = 8.308$ $P < 0.01$

The difference is statistically significants.

The ratio of HBs Ag+ve cases with increased serum bilirubin and transaminases to HBsAg+ve cases without increase in serum bilirubin and transaminases was 3:2.

Table 10: Association of Delta hepatitis infection and the level of serum bilirubin and transaminase enzymes in sera from patients who presented with jaundice among the 60 polytransfused patients of the study.

Serum bilirubin and transaminases.	No. of cases	δ Ab +ve	δ Ab -ve
Increased	21	10	11
	35%	66.7%	24.4%
Not affected	39	5	34
	65%	33.3%	75.6%
Total	60	15	45

$\chi^2 = 8.816$ $P < 0.01$

The difference is statistically significant

In patients with positive anti-delta, the ratio of cases with increased serum bilirubin and transaminases to cases without increase in serum bilirubin and transaminases was 2:1.

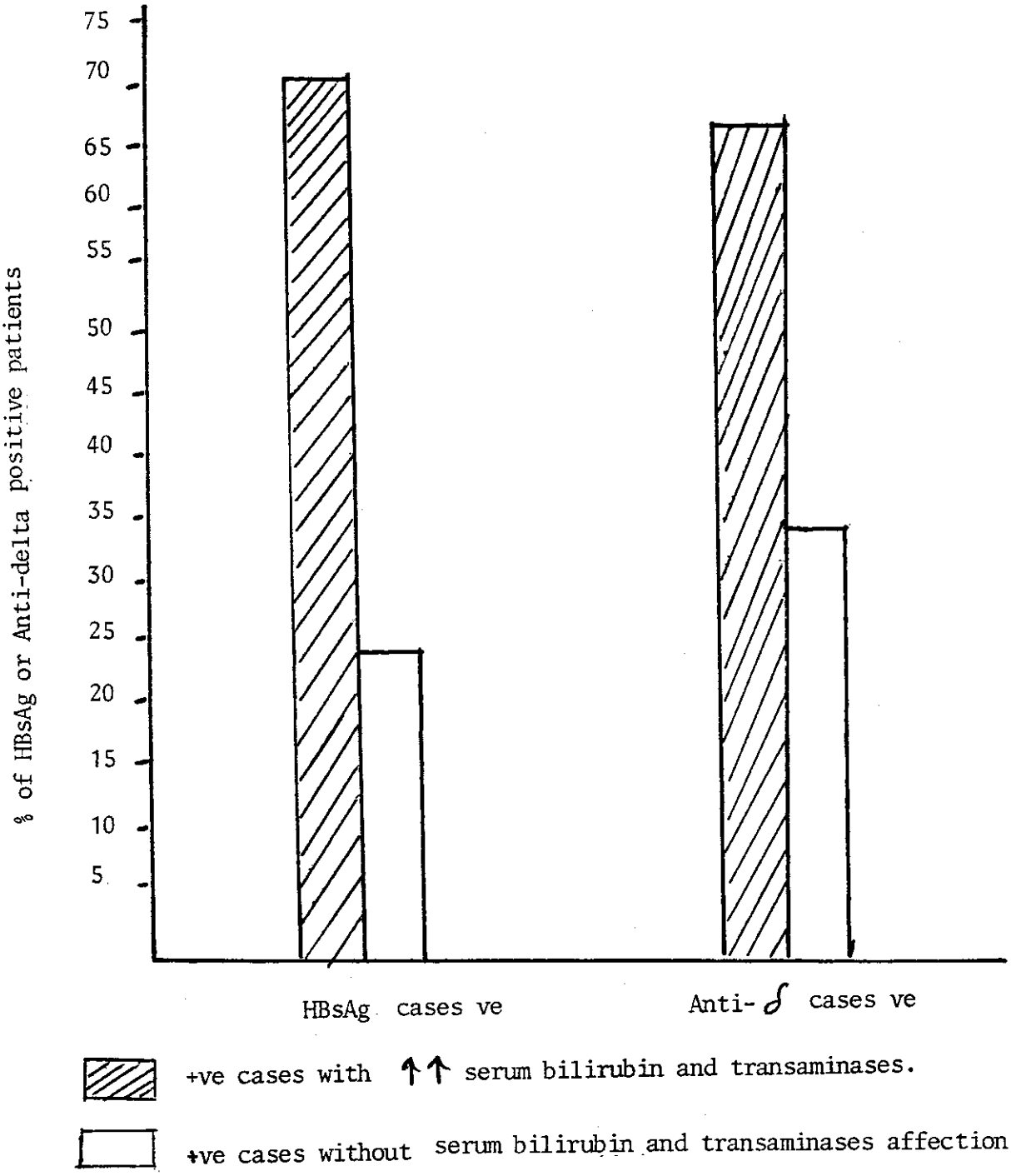

Fig.3: Association of HBV and delta hepatitis infection and increased serum bilirubin and transminases in sera from patients who presented with jaundice in the 60 polytransfused patients of the study.

Table 11: Observations of hepatosplenomegaly in patients with delta hepatitis infection among HBsAg carriers who received several blood units.

δ Ab	No. of HBsAg carriers	$\bar{X}$ of ↑↑ in liver size (cm)	S.D.	No. of HBsAg carriers	$\bar{X}$ of ↑ in spleen size (cm).	S.D.
+ve	13	4.27	3.81	9	6.94	5.28
-ve	10	2.8	3.45	5	6.70	6.65
Total	23 [2 cases were missed because they were not felt liver].			14 [11 cases missed because they were removed or not felt spleen].		

W = 1.7 P < 0.05

The difference is statistically significant

W = 0.1 P > 0.05

The difference is statistically insignificant

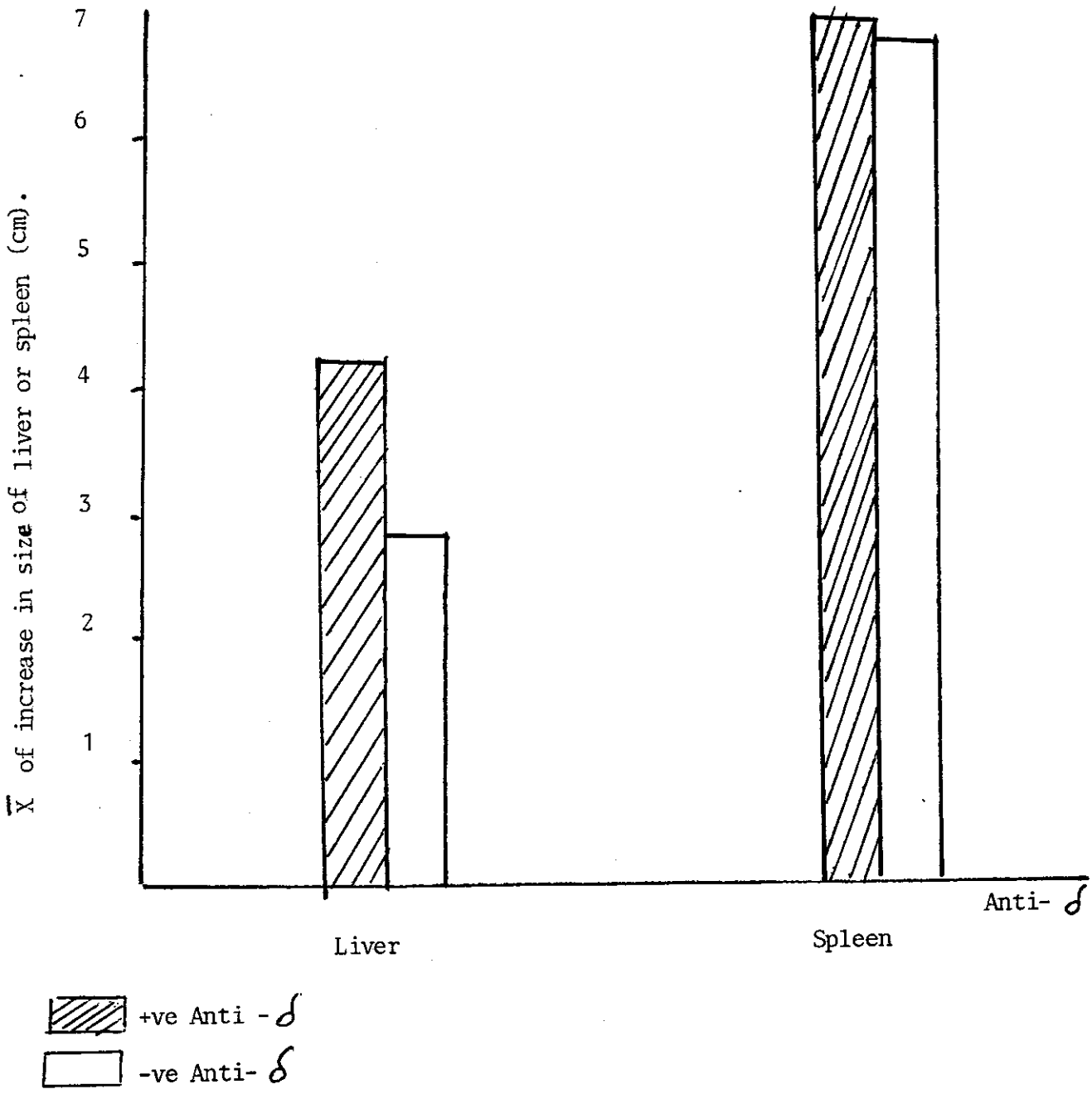

Fig. 4: Observations of hepatosplenomegaly in patients with delta hepatitis infection among HBsAg carriers who received several blood units.

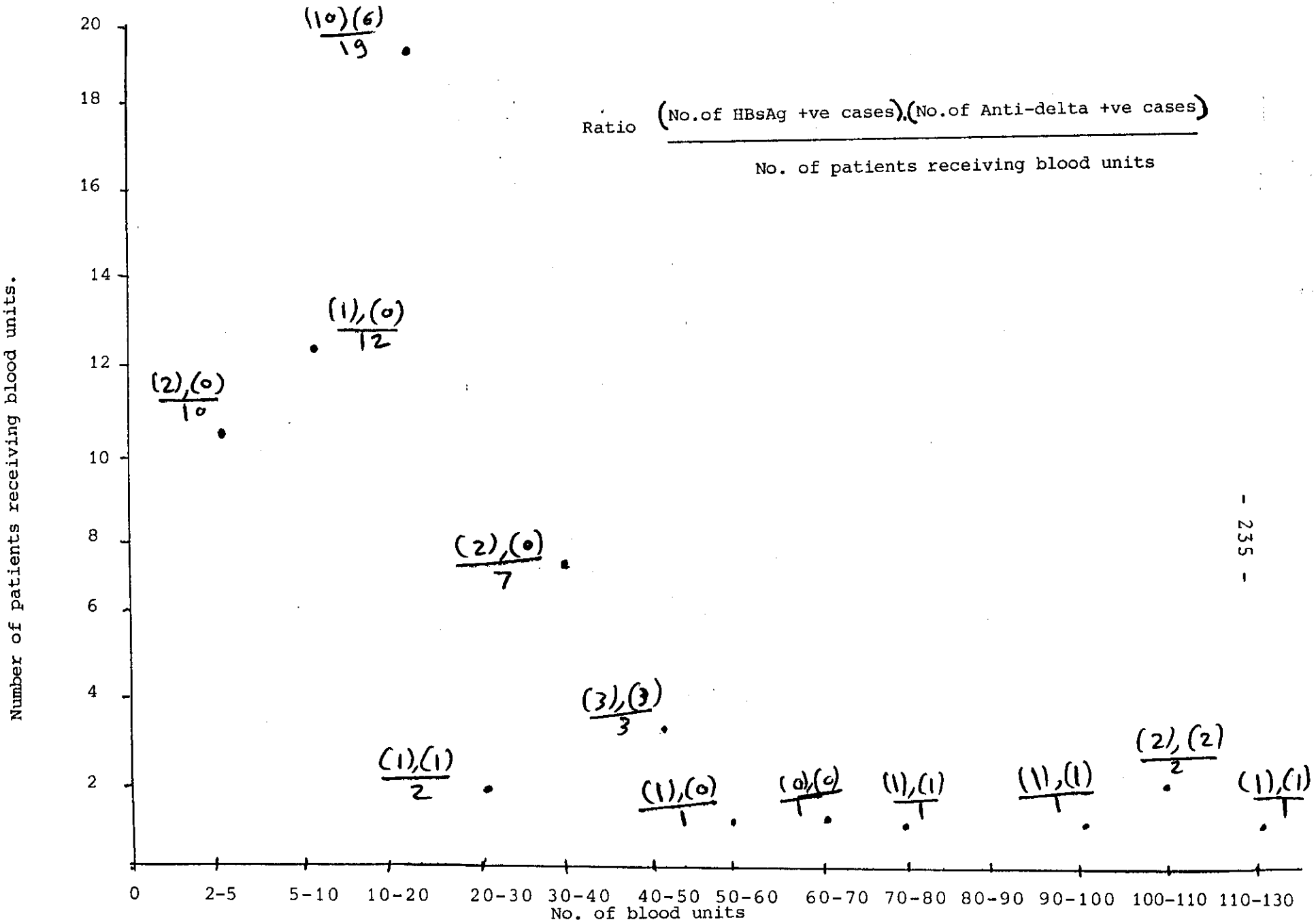

Fig.5: Relation between the number of blood transfusions and the prevalence of HBsAg and anti-delta in 60 polytransfused children at the end of the follow up study.

Table 12: Effect of the duration of blood polytransfusions on the prevalence of hepatitis HBsAg in the 60 polytransfused children at the end of follow up study.

HBsAg	No. of cases	Mean of duration in years.	S.D.
+ve	25	2.98	2.37
-ve	35	1.81	0.81

T = 2.72 P < 0.01

The difference is statistically significant.

Table 13: Effect of the duration of blood polytransfusions on the prevelance of Delta hepatitis infection in the 60 polytransfused children at the end of follow up study.

δ Ab.	No. of cases	Mean of duration in years	S.D.
+ve	15	3.73	2.86
-ve	45	1.94	0.95
Total	60		

$T = 2.94 \qquad P < 0.01$

(The difference is statistically significant).

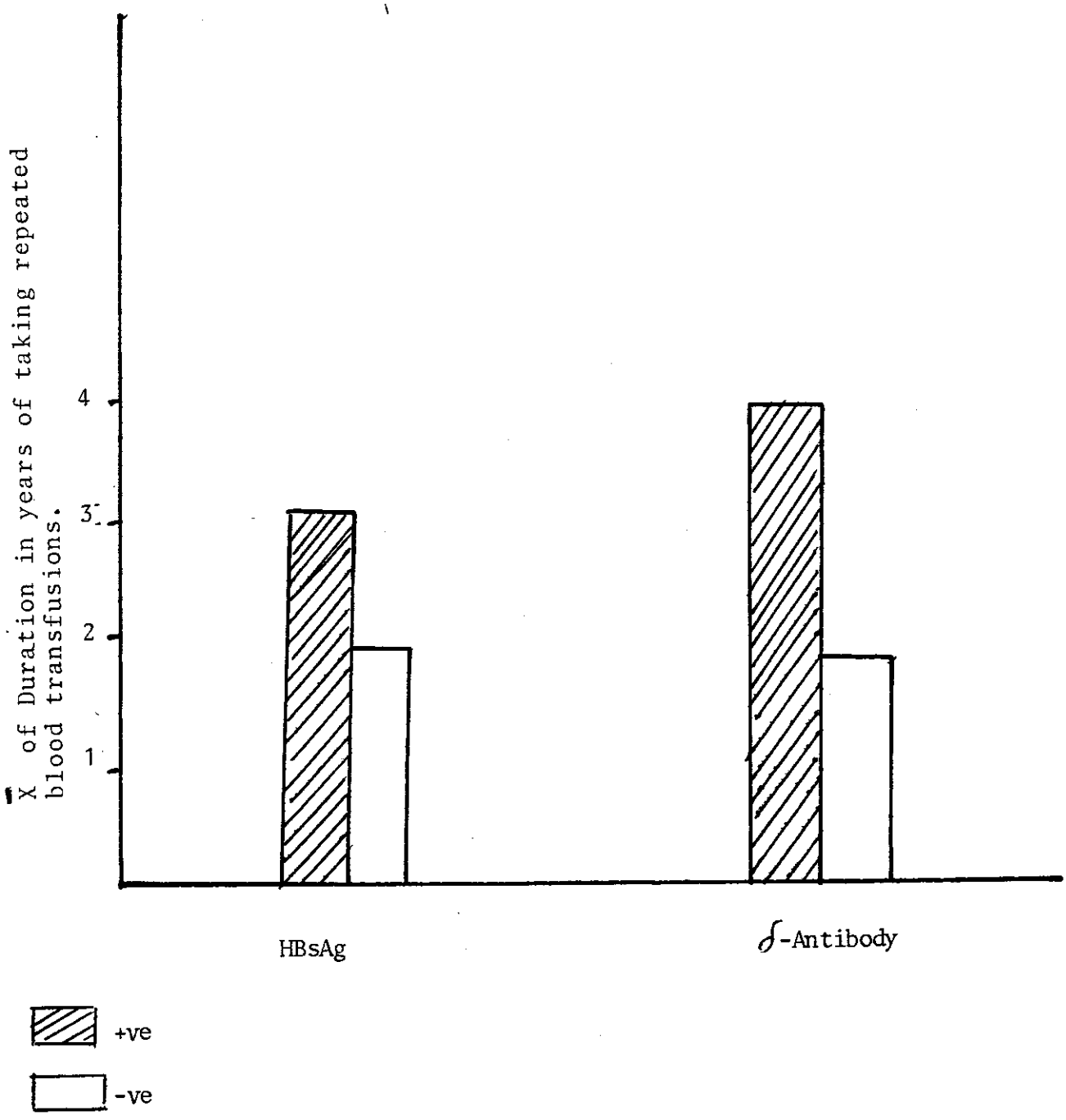

Fig. 6: Relation between the duration of blood transfusions and the prevalence of hepatitis B infection and delta hepatitis infection.

Table 14 : Effect of the amount of blood transfused on the prevalence of hepatitis B surface antigen in 60 polytransfused children.
[Amount of blood transfused = Number of transfusions X Vol. of blood transfused/once].

HBsAg	No. of cases	Mean of amount of blood $\bar{X}$ (c.c)	S.D.
+ve	25	7086	7345
-ve	35	2737	2446
Total	60		

T = 3.27 P < 0.01

(The difference is statistically significant).

Table 15 : Effect of the amount of blood transfused on the prevalence of Delta hepatitis infection in 60 polytransfused children.
[Amount of blood = number of transfusions X Vol. of blood transfused].

δ Ab.	No. of cases	Mean of amount of blood transfused $\overline{X}$ (c.c)	S.D.
+ve	15	9610	8571
-ve	45	2862	2301
Total	60		

T = 4.85 P < 0.01

(The difference is statistically significant).

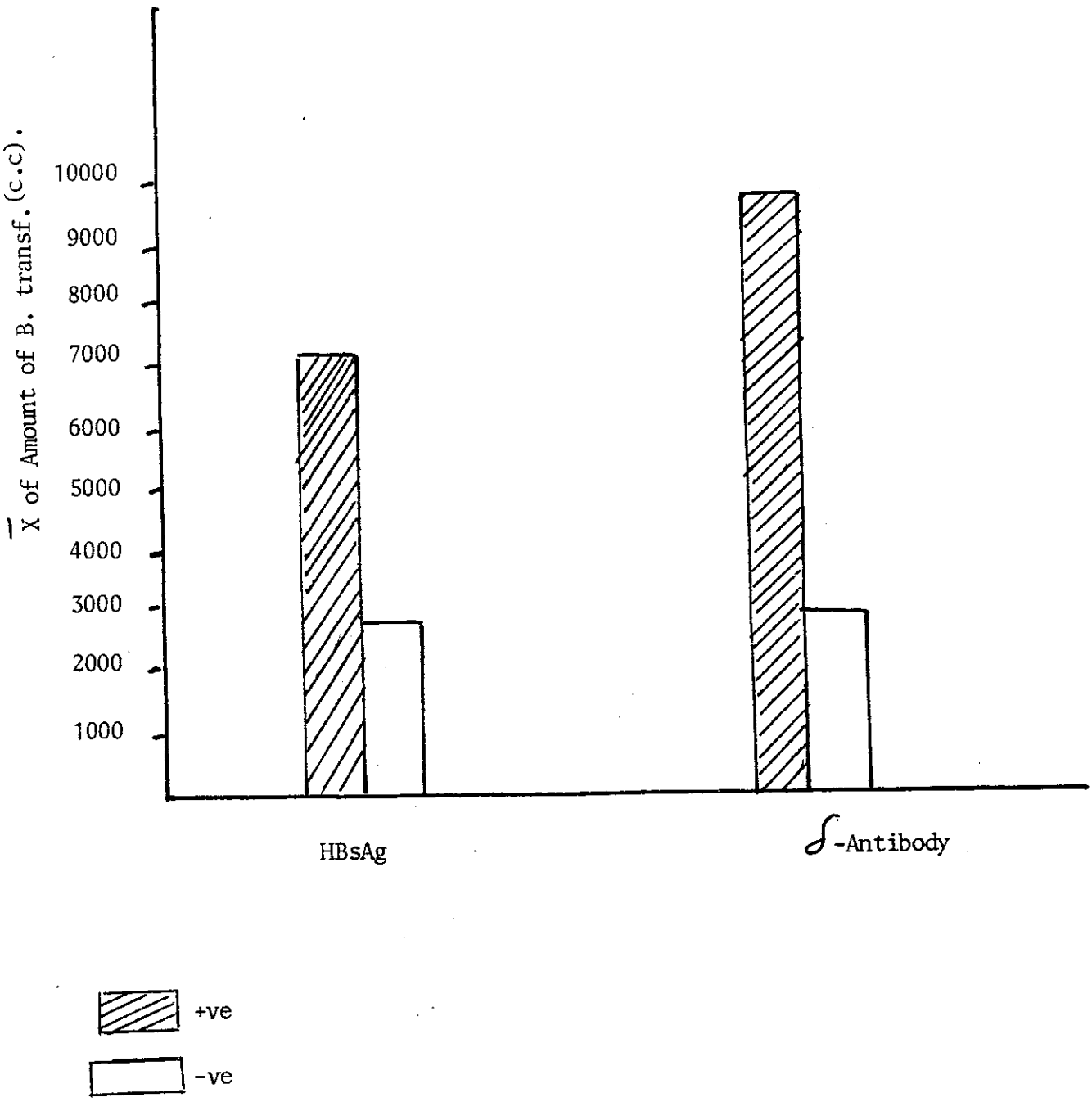

Fig.7: Relation between the amount of blood transfused and the incidence of hepatitis B and delta heptitis infections.

Table 16: Comparison of the prevalence of serum HBsAg and serum anti-delta between 60 sera from control children and 60 sera from patients who received blood transfusions.

Cases	No. of cases	HBsAg +ve	HBsAg -ve	δ Ab +ve	δ Ab. -ve
Cases received blood transf.	60	25	35	15	45
		41.7%	58.3%	25 %	75 %
Control cases	60	5	55	0	60
		8.3%	91.7%	0	100 %

$X^2 = 17.78$

$P < 0.001$

(The difference is statistically significant) (Highly significant).

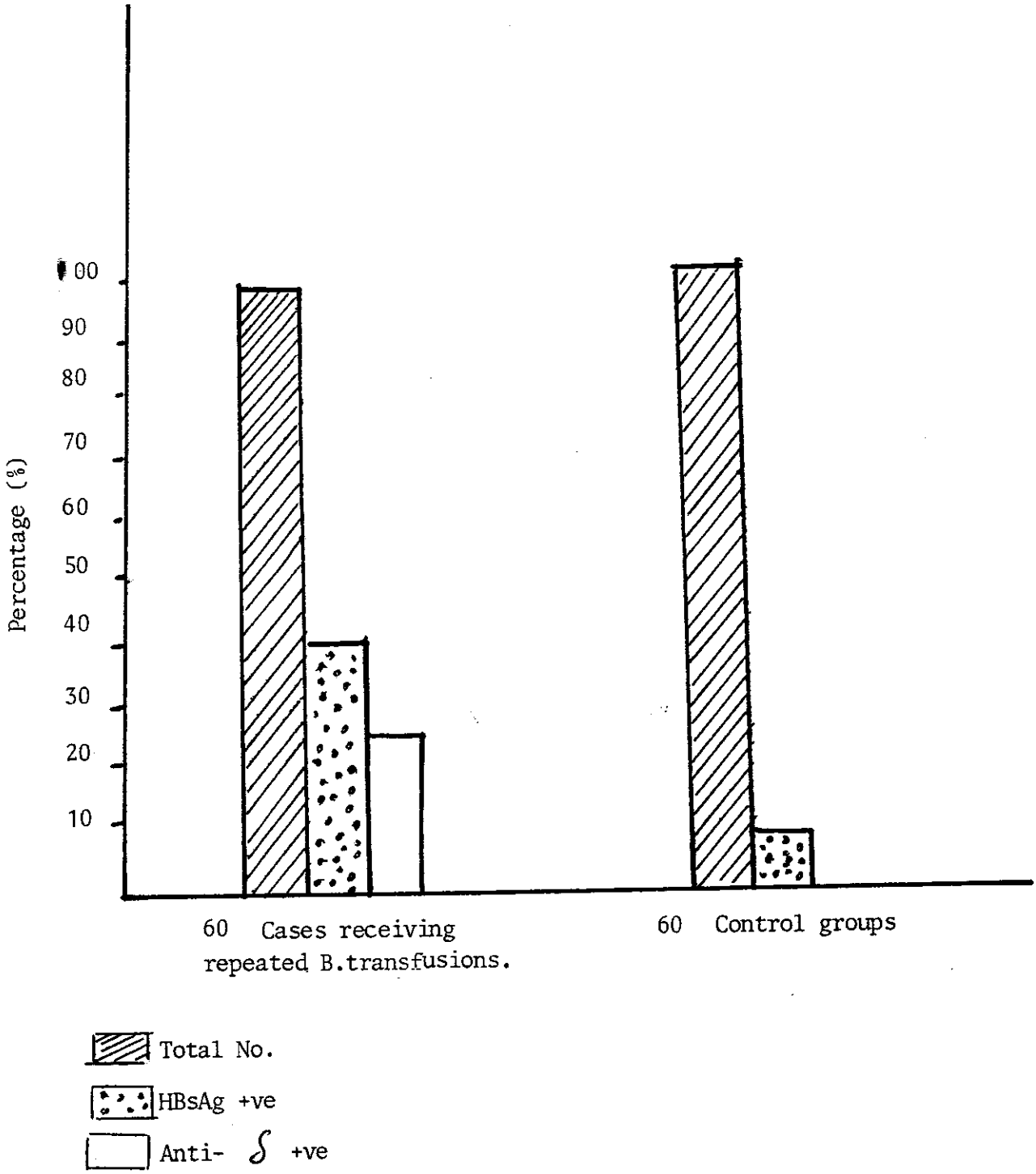

Fig.8: Comparison between 60 sera from children receiving repeated blood transfusions and 60 normal cases in the prevalence of serum HBsAg and anti-delta.