RESULTS

The present study included 100 patients were diagnosed as Acute hepatitis B (AHB) and were categorized into two main groups:-

1 - Mixed acute hepatitis B and schistosomiasis (schistosomal group) included 50 patients.

2 - Pure acute hepatitis B alone (non - schistosomal group) included 50 patients.

They were studied clinically, Biochemically, serologically and pathologically and were followed-up from the start of AHB to the end of one year.

Tab. (1) According to age patients were divided into three groups:-

First group : their ages ranged from 14 - 26 years. With a mean age of 21.6 ± 6.2 years. This group included 48 patients (21 Schistosomal and 27 Non - Schistosomal).

Second group: Their ages ranged from 27 - 43 years with a Mean age of 35.4 ± 11.5 years and included 45 patients (23 Schistosomal and 22 Non - Schistosamal).

Third group: Their ages ranged from 44 - 59 years with a Mean age of 51.3 ± 15.1 years and included 7 patients (4 Schistosomal and 3 non - Schistosomal).

* Sex distribution Tab. (2) :

The Schistosomal group included 27 males and 23 females while the non - Schistosomal group included 34 Males and 16 females.

When the incidence of AHB in schistosomal and non - schistosomal groups in relation to sex was studied (Tab. 3) It was found that, the incidence in Males was 44.3% (27 out of 61) in the schistosomal group. While it was 55.7% (34 out of 61 patients in the non - schistosomal group.

As regard the incidence in females it was 59% (23 out of 39 patients) in schistosomal group, while it was 41% (16 out of 39) in the non - schistosomal group.

* Activity of schistosomiasis :

The schistosomal patients were subdiveded according to schistosomal activity into two groups (Tab.4):

Active schistosomiasis : included 34 patients and inactive schistosomiasis : included 16 patients.

*** Symptoms:-**

The symptoms of AHB were studied in both groups (Tab. 5) and were nearly the same except fever and rigors which were significantly higher in schistosomal patients and still higher in Active schistosomiasis. Fever was reported in 36 out of 50 patients (72%) and in 12 out of 50 patients (24%) in schistosomal and non - schistosomal groups respectively. The results were statistically significant.

fever and rigors (Tab. 6) were found in 28 out of 34 patients (82.4%) and in 8 out fo 16 patients (50%) in active and inactive schistosomiasis respectively and the results were statistically significant.

In both groups (schistosomal and non - schistosomal).

*** Hepatosplenomegaly:-** (Table 7,8)

- The Incidence of hepatosplenomegaly was studied, followed up and compared. At the start of AHB the incidence was 48% (24 out of 50) in schistosomal patients, versus 12% (6 out of 50) in non - schistosomal patients.

During the follow up period, the results showed 52% versus 12% at 3 month, 55.3% versus 14% at 6 nonth, 71.1% versus 21.7% at 9 months and 80% versus 15.6% at 12 month, in schistosomal and non - schistosomal patients respectively.

When both groups were studied according to sex, (Tab. 8):

In schistosomal group, the incidence of hepatosplenomegaly was 51.9% (14 out of 27 Male patients) at one month, versus 43.5% (10 out of 23) female patient at the same period.

At 3 month and 6 month it was 51.9% (14 out of 27) male patients versus 52.2% (12 out of 23) female patients.

At 9 month it was 78.3% (18 out of 23) Male patients versus 63.6% (14 out of 22) female patients.

In non - schistosomal group, the results showed 11.8% (4 out of 34) Male patients versus 12.5% (2out of 16) female patients at the first month.

At 6 month, it was 11.8% (4 out of 34) male patients, versus 18.8% (3 out of 16) female patients. At 9 month, it was 20% (6 out of 30) male patients versus 25% (4 out of 16) female patients.

At 12 month, it was 23.3% (7 out of 30) male patients versus 26.7% (4 out of 15) female patients.

These differences were statistically insignificant.

Ascites : (Table 9 , 10)

The incidence and development of ascites were studied and followed up in both groups and in relatien to schistosomal activity. In schistosomal group the results showed that ascites was found in 2 (4%) out of 50 patients at one month, 4 (8%) out of 50 patients at 3 month, 9 (19.2%) out of 47 patients at 6 month, 9 (20%) out of 45 patients at 9 month and 21 (52.5%) out of 40 patients at 12 month.

In non - schistosomal group, the incidence of ascites showed non at one month, (2%) one out of 50 at 3 and 6 months, 2 (4.3%) out of 46 patients at 9 month and 2 (4.4%) out of 45 patients at 12 month.

There results were statistically significant. When schistosomal group was subdivided into active and inactive schistosomiasis, Tab.(10) there was no significant difference in incidence of ascites in both groups.

*** Liver functin tests:** (Tab. 11, 12, 13, 14, 15).

Serum Bilirubin :-

The mean values were 8.1 ± 1.1, 7.1 ± 0.9, 3.1 ± 0.8, 1.8 ± 0.3 and 1.3 ± 0.4 mg% in schistosomal patients at 1, 3, 6, 9 and 12 months respectively after acute hepatitis B.

on the otherhand, the non - Schistosomal patients showed the following corrosponding mean values: 7.4 ± 1.2, 2.2 ± 0.3, 1.7 ± 0.2, 0.7 ± 0.1 and 0.8 ± 0.2 mg %.

Serum glutamic oxalacetic transaminase: (SGOT)

The results showed, 340 ± 56.5, 205 ± 62, 116 ± 18.3, 91.5 ± 11.6 and 85 ± 8.6 U/ liter in schistosomal patients at 1, 3, 6, 9 and 12 months.

Wherease the results in non - Schistosomal group were, 307 ± 62, 201 ± 27.5, 10 3 ± 16.7 86.5 ± 12.4 and 42.7 ± 6.7 at the same periods of follow up. The differences were statistically insignificant.

Serum glutamic pyruvic transaminase : (S G P T)

Tab, (11) the results were, 412 ± 62.5, 215 ± 36.7, 137 ± 27.6, 87.6 ± 12.5 and 72 ± 9.6 U/liter in schistosomal patients. The corrosponding results in non - Schistosomal patients were, 374 ± 105, 272 ± 37.8, 126 ± 17.8, 78 ± 12.6 and 40.8 ± 6.1 U/liter. The normal level of these enzymes ranged from 10 - 40 U/ liter.

Tab. (12) shows the results of serum bilirubin, SGOT and SGPT in relation to schistosomal activity and no statistical significant differences were found.

Tab. (13) shows the mean values of Alkaline phosphatase and prothrombin activity in both groups. In schistosomal patients Alkaline

phosphatase was, 312 ± 46, 281 ± 40, 286 ± 25, 156.5 ± 30 and 148.5 ± 27 U/L at 1, 3, 6, 9 and 12 month respectively. The corrosponding values in non - Schistosomal patients were, 321 ± 51, 296 ± 46, 175 ± 18.5, 118 ± 21.5 and 86 ± 9.2 U/ L (the normal level was 25 - 115 U/L) As regard prothrombin activity in Schistosomal patients the results were 70% ± 10, 68% ± 12, 63% ± 11, 72% ± 8 and 72% ± 9 at 1, 3, 6, 9 and 12 month respectively. The corrosponding results in non-schistosomal patients were, 72% ± 11, 73% ± 8.5, 78% ± 11.6, 79% ± 13.5 and 85% ± 12.1 respectively. These results were statistically insignificant.

Tab. (15) shows comparison between liver function tests in schistosomal patients in relation to anti-schistosomal treatment. At the end of follow up the results were statistically insignificant as regard serum bilirubin, alkaline phosphatase and prothrombin activity. While the levels of SGOT and SGPT were significantly higher in untreated than in the treated patients .

*** Viral markers :-**

Tab. (16) shows the collective results of viral markers in both group throughout the follow up period.

The results showed higher incidence of persistent HBSAg and HBeAg in schistosomal patients than in non- schistosomal.

As regard Anti HBS at the first month all cases were negative. This indicates the recent onset of acute HBV infection .

*** Follow up of HBSAg:**

The follow up of our patients as regard the persistence of HBSAg showed that carrier rates were found to be 100%, 47%, 29%, 29.9% and 16.5% at 1, 3, 6 and 12 month period respectively after AHB. (Tab. 17)

When the patients were classified as schistosomal and non-schistosomal, the persistent antigenaemia was found to be 100%, 62%, 48.9 and 27.5% at 1, 3, 6 and 12 month respectively in schistosomal patients.

As regard, the non-schistosomal patients the corrosponding results were 100%, 32%, 12% and 6.7% at the same periods of follow up respectively. Tab. (18).

When we studied the carrier rates in relation to schistosomal activity, patients with active schistosomiasis showed 100%, 64.7 , 50% and 26.7% carrier rates.

While patients with inactive schistosomiasis showed the following corrosponding results, 100%, 56.3%, 46.7% and 30% at the same periods of follow up. Tab. (19).

Relation to age : (Tab. 20)

As regard persistent antigenaemia in relation to age, the results showed,

- 100%, , 70.8% , 45.8% and 28.2% for ages 14 - 26 years at the periods of follow up.

- While the results of ages (27 - 43Y.) showed, 100%, 24.4%, 11.9% and 5% respectively. In ages (44 - 59Y.) the results were, 100%, 28.6%, 14.3% and 16.7%. These findings were statistically significant.

Persistent antigenaemia in relation to sex : (tab. 21)

Three months after AHB, HBS antigenaemia was significantly higher in males (52.5%) than in females (38.5%).

At 6 month the carrier rate was 41.4% in males and 12.8% in females the results were statistically significant. At 12 month, males showed persistent antigenaemia were 22% and 8.6% in females. The results still statistically significant.

The effect of antischistosomal treatment on HBS -Ag clearance was studied and the results showed 39.1% and 14.3% carrier rates in treated patients at 6 and 12 months respectively while the untreated patients showed 63.6 and 50% carrier rates at the same periods these results were statistically significant at 12 month only. (Tab. 22).

*** Follow up of e-antigen:**

Tab. (23) shows the frequency of HBeAg in the studied groups. HBe-Ag was detected in 31 out of 50 (62%), 23 out of 31 (74%), 18 out of 23 (78.3%) and in 6 out of 11 (54.5%) patients who had positive HBS-Ag in schistosomal group at 1, 3 , 6 and 12 month respectively.

In non- schistosomal group, HBe-Ag was detected in 22 out of 50 (44%), 7 out of 16 (43.8%), 2 out of 6 (33.3%) and in non-out of 3 patients, who were HBSAg positive at the same periods of follow up respectively.

*** Delta Co-Infection:**

The patients were considered to have delta co-infection when they have evidence of delta infection (delta antigen) with evidence of AHB infection (Lavarini et al, 1982) and (Rizzetto, 1983). Patients in this group included 11 patients, 8 schistosomal and 3 non-schistosomal.

There was a significant higher incidence of delta co-infection in schistosomal than in non-schistosomal patients. Tab. (24).

As regard incidence of delta co-infection in schistosomal patients in relation to activity of schistosomiasis, there was no statisitical significant difference Tab. (25).

*** Delta super infection:**

Delta super infection was diagnosed by finding of delta antigen in patients with persistent HBS antigenaemia and negative for HBC antibody of IgM class (Lavarini, et al, 1982) and (Rizzetto 1983).

The incidence was (67.7%) 21 out of 31 schistosomal patients and (50%) in non-schistosomal patients (8 out of 16). The difference was statistically insignificant. Tab. (26).

When the incidence of delta super infection was studied in relation to schistosomal activity there was increased incidence in active schistosomal patients. Tab. (27).

Tab. (28) shows the incidences of delta co-infection and super infection in relation to sex, the incidences were statistically significant higher in males than in females.

Tab. (29) shows the liver function tests in relation to delta affection. Patients were classified into three groups; delta co-infection, delta super infection and no delta affection groups. The results were statistically insignificant.

When the incidence of ascites was studied at the end of follow up in relation to delta infection, it was found to be (45.5%) 5 out of 11, (41.4%) 12 out of 29 and (13.3%) 6 out of 45 in patients with delta co-infection, delta super-infection and in patients without delta affection respectively Tab. (30). With a significant higher incidence in both delta co- infection and super-infection than in patients without delta affection.

***HBS antigenaemia in relation to delta co-infection:** (Tab. 31).

In schistosomal patients with delta co-infection, HBS-antigenaemia was detected in 100%, 87.5%, 62.5% and 40% respectively at different periods of follow up.

While in non-schistosomal patients with delta co-infection the results were, 100%, 66.6%, 66.6% and zero% at the same periods. These results were statistically insignificant.

*** HBS-antigenaemia in relation to delta super - infection:** (Tab. 32).

Persistent HBS antigenemia in schistosomal patients with delta super-infection were found to be 52.4%, 35.3% and 31.3% at 3,6 and 12 month respectively.

While the non- schistosomal patients with delta-super infection showed rates of 50%, 33.3% and 20% respectively at the same periods. These results were statistically insignificant

Tab. (33) shows the results of persistent HBS-antigenaemia in the three groups, delta co-infection, delta super infection and group without delta infection.

The results were significantly higher in delta co-infection group than in patients without delta infection at 3 and 6 months.

At 12 month the carrier rate was significantly higher in delta super infection group than in patients without delta infection.

*** Bleeding osephageal varices :** Tab. (34)

Bleeding oesophageal varices was reported during the follow up in 7 schistosomal patients and in one non- schistosomal patients at the end of follow up.

One of the schistosomal bleeders had past history of bleeding befor onset of AHB. When the incidence of bleeding oesophageal varices was studied in relation to delta infection, results showed 2 out of 11 (18.2%), one out of 23 (4.3%), and non- out of 63 (0%) in delta co-infection group, delta super infection group and in patients without delta affection respectively at the end of 6 month.

At the end of follow up, the results showed 4 out of 8 (50%), 3 out of 21 (14.3%) and one out of 56 (1.8%) patients in the three above mentioned groups respectively. The results were statistically significantly higher in patients with delta co-infection or delta super - infection than in patients without delta affection tab. (35).

*** Histopathology :**

Tab. (36) showed the histopathological findings of liver biopsies (50 cases in schistosomal group and 50 cases in non- schistosomal group).

Chronic persistent hepatitis (CPH) was found in 13 (26%) patients in schistosomal group and in 11 (22%) patients in non- schistosomal group.

Chronic active hepatitis (CAH) was detected in 17 (34%) patients in schistosomal group and in 3 (6%) patients of the non-schistosomal group.

Cirrhosis (mixed) was found in 7 (14%) patients in schistosomal group.

Resolved hepatitis was found only in non-schistosomal group 36 patients out of 50 (72%).

CAH with cirrhosis was detected only in schistosomal group 5 out of 50 patients (10%).

Pure Bilharzial fibrosis was found in 8 schistosomal patients (16%).

All schistosomal cases showed histopathological evidence of hepatic schistosomiasis in the form of :-

Bilharzial granuloma, periportal fibrosis and or Bilharzial pigment.

Tab. (37) shows the incidence of CAH in relation to schistosomiasis:-

- Seventeen out of 50 patients with schistosomiasis showed CAH (34%). Three out of 50 non-schistosomal patients (6%) showed CAH.

These findings were statistically highly significant.

Tab. (38) shows the incidence of CAH in schistosomal patients in relation to anti-schistosomal treatment.

In treated group 23 patients were biopsied, CAH was detected in 7 patients (30.4%). In untreated group 11 patients were biopsied, CAH was detected in 3 patients (27.3%).

The results were statistically insignificant.

Tab. (39) shows the incidence of CAH in relation to persistent HBS antigenaemia :

In Schistosomal patients; CAH was detected in 13 out of 23 patients (56.5%) with persistent HBS- antigenaemia after 6 month follow-up.

* While CAH was detected in 4 out of 24 patients with cleared - HBS-Ag.. (16.7%). The incidence was statistically highly significant higher with persistent HBS-antigenaemia.

In non- schistosomal group;

CAH was detected in 2 out of patients with persistent antigenaemia (33.3%) at 6 month follow up while CAH was detected in one out of 44 patients with cleared HBS-antigen. The results were statistically significant.

Tab. (40) shows the incidence of CAH in relation to delta virus affection;

It was 36.4%, 34.4% and 10% in patients with delta co-infection, delta super-infection and in patients without delta affection. On statistical analysis the frequency of CAH was insignificantly higher in cases with delta co-infection than in cases with delta super infection while it was significantly higher in delta co-infection and delta super - infection groups than in patients without delta affection.

Tab. (41) shows the results of CAH in relation to e-antigenaemia;

- In shistosomal patients CAH was detected in 14 out of 18 patients (77.8%) with e-antigen positive sera. While it was detected in 3 out of 5 patients (60%) with e-antigen negative sera, the results were statistically insignificant.

- In non-schistosomal patients CAH was detected in one out of 2 patients (50%) seropostive for e-antigen. While it was detected in 2 out of 4 oatients (50%). Seronegative for e-antigen, the results were insignificant.

Tab. (42) shows the mortality among schistosomal and non-schistosomal patients during the follow up period the results showed higher mortality rate in schistosomal group 6 out of 50 (12%) patients versus non- among non- schistosomal patients.

The results were statistically highly significant. The 6 died patients were 5 males and one female, delta co-infection was detected in 3 died patients and delta super-infection in two of them.

The cause of death was bleeding oesophageal varices in 4 patients and fulminant hepatic failure in two of them.

Age group	Mean Age	S.D.	Total No. of patients	Schistosomal	Non-Schistosomal
14 - 26 years	21.6	± 6.2	48	21	27
27 - 43 years	35.4	± 11.5	45	23	22
44 - 59 years	51.3	± 15.1	7	4	3

Tab. (1) Age distribution.

Sex	No.	%	Schistosomal	Non-Schistosomal
Male	61	61	27	34
Female	39	39	23	16

Tab. (2) Sex distribution .

Sex	Schistosomal		Non-Schistosomal	
	No. of patients	%	No.ofpatients	%
Male No. = 61	27	44.3 %(a)	34	55.7 %(b)
Female No. = 39	23	59 % (c)	16	41 % (d)
Total No. = 100	50		50	

Tab. (3) Incidence of AHB in Schistosomal and Non-Schistosomal patients (in relation to sex.)

a ≠ b Insig a ≠ c Insig. c ≠ d Insig. b ≠ d Insig.

P value > 0.05

Active Shistosomiasis		Inactive Shistosomiasis	
No. of Patients	%	No. of patients	%
34	68 %	16	32 %

Total No.of Schistosomal patients = 50 patients

Tab. (4) Activity of Shistosomiasis among Schistosomal patients with AHB

Symptom	Schistosomal group (No = 50)		Non-Schistosomal group (No. = 50)		Sig.
	No.of patients	%	No. of patients	%	
Anorexia	19	38	18	36	Insig. P > 0.05
Malaise	12	24	11	22	Insig. P > 0.05
Dyspepsia	21	42	19	38	Insig. P > 0.05
Vomiting	20	40	20	40	Insig. P > 0.05
Diarrhea	7	14	8	16	Insig. P > 0.05
Constipation	6	12	5	10	Insig. P > 0.05
Abdominal pain	27	54	26	52	Insig. P > 0.05
Pale stool	6	12	5	10	Insig. P > 0.05
Dark urine	43	86	40	80	Insig. P > 0.05
Fever	36	72	12	24	Sig. P < 0.05
Rigors	17	34	4	8	Sig. P < 0.05
Yellow sclera	50	100	50	100	Insig. P > 0.05
Itching	4	8	4	8	Insig. P > 0.05
Serum Sickness-like symptoms	2	4	3	6	Insig. P > 0.05

Tab. (5) Symptoms of AHB at time of onset .

Symptom	Active Schistosomiasis (No = 50)		Inactive Schistosomiasis (No. = 50)		Sig.
	No.of patients	%	No. of patients	%	
Fever	28	82.4	8	50	Sig. P < 0.05
Rigors	12	35.3	5	32.3	Insig. P > 0.05

Tab. (6) Fever & Rigors at presentation among Schistosomal patients (In relation to Schistosomal activity) .

Month.	Schistosomal group (No = 34)			Non-Schistosomal group (No. = 16)			Sig.
	Total No. of patients	No.of patients with H.S.	%	Total No. of patients	No. of patients with H.S	%	
1	50	24	48	50	6	12	Sig.P < 0.05
3	50	26	52	50	6	12	Sig.P < 0.05
6	47	26	55.3	50	7	14	Sig.P < 0.005
9	45	32	71.1	46	10	21.7	Sig.P < 0.005
12	40	32	80.0	45	7	15.6	Highly Sig. P < 0.01

Tab. (7) Incidence of Hepatosplenomegaly (H.S.) In Schistosomal and Non-Schistosomal patients after AHB.

M.	Schistosomal			Non-Schistosomal		
	Male	Female	Sig.	Male	Female	Sig.
1	14/27 = 51.9 %	10/23 = 43.5 %	Insig	4/34 = 11.8 %	2/16 =12.5 %	Insig. P > 0.05
3	14/27 = 51.9 %	12/23 = 52.2 %	Insig	4/34 = 11.8 %	2/16 =12.5 %	Insig. P > 0.05
6	14/24 = 58.3 %	12/23 = 52.2 %	Insig	4/34 = 11.8 %	3/16 =18.8 %	Insig. P > 0.05
9	18/23 =78.3 %	14/22 =63.6 %	Insig	6/30 =20 %	4/16 =25 %	Insig. P > 0.05
12	18/22 =81.8 %	14/18 = 77.7 %	Insig	7/30 = 23.3 %	4/15 =26.7 %	Insig. P > 0.05

Tab. (8) Incidence of Heptosplenomegaly among Schistosomal & Non-Schistosomal patients (in relation to sex).

	at 1month	3 m.	6 m.	9 m.	12 m.
Schistosomal	2/50 = 4 %	4/50 = 8 %	9/47 = 19.2 %	9/45 = 20 %	21/40 =52.5%
Non-Schistosomal	0/50 = Zero	1/50 =2 %	1/50 = 2 %	2/46 = 4.3 %	2/45 = 4.4 %
Significanse	N. Sig. P > 0.05	N. Sig. P > 0.05	Highly Sig. P < 0.01	Highly Sig. P < 0.01	Highly Sig. P < 0.01

Tab. (9) Development of Ascites during the followup period in Schistosomal & Non-Schistosomal. Cases after AHB .

	1	3	6	9	12
Active Schistosomiasis	$^{1}/_{34}$ (2.9 %)	$^{3}/_{34}$= 8.8 %	$^{6}/_{32}$ = 18.75 %	$^{7}/_{31}$= 22.6 %	$^{17}/_{30}$ = 56.7 %
Inactive Schistosomiasis	$^{1}/_{16}$= 6.3 %	$^{1}/_{16}$=6.3 %	$^{3}/_{16}$= 18.75 %	$^{2}/_{14}$= 14.3 %	$^{4}/_{10}$= 40 %
Sig.	Insig. P > 0.05	Insig. P > 0.05	Insig. P > 0.05	Insig. P > 0.05	Insig. P > 0.05

Tab. (10): Incidence of Ascites in Schistosomal patients (in relation to Schistosomal activity)

	1 m.		3 m.		6 m.		9 m.		12 m.	
Schistosomal	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Serum Bilirubin(a)	8.1	±1.1	7.1	± 0.9	3.1	± 0.8	1.8	± 0.3	1.3	± 0.4
SGOT (b)	340	±56.5	205	± 62	116	± 18.3	91.5	± 11.6	85	± 8.6
SGPT (c)	412	± 62.5	215	± 36.7	137	± 27.6	87.6	± 12.5	72	± 9.6
Non Schistosomal										
S.Bilirubin (d)	7.4	±1.2	2.2	± 0.3	1.7	± 0.2p	0.7	± 0.1	0.8	± 0.2
SGOT (e)	307	± 62	201	± 27.5	103	± 16.7	86.5	± 12.4	42.7	± 6.7
SGPT (f)	374	± 105	272	± 37.8	126	± 17.8	78	±12.6	40.8	± 6.1

Tab. (11): Liver functions after AHB (in relation to Schistosomiasis)

a ≠ d sig. only at 3 month. p< 0.05 b ≠ e insig. p > 0.05 c ≠ f insig. p > 0.05

	1 m.		3 m.		6 m.		9 m.		12 m.	
Active Schistosomiasis	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
S. bilirubin (a)	8.3	± 1.1	7.6	±1.5	3.3	± 1.2	2.8	± 0.9	1.6	±0.3
SGOT (b)	336	± 62.5	289	± 37.5	286.5	± 48	118	± 21.5	96.5	± 17.6
SGPT (c)	402	± 73.5	396.5	± 63	275.6	± 59	112.5	± 11.5	83.5	± 7.8
Inactive Schistosomiasis										
S. Bilirubin (d)	7.6	± 1.2	6.8	± 0.9	3.1	± 0.6	2.9	± 0.4	1.4	± 0.3
SGOT (e)	341	± 75.6	281.5	± 58.6	273	± 24	134.6	± 16	89.6	± 12.5
SGPT (f)	406	± 82.5	381	± 72.6	264	± 18.5	123.5	± 13	795	± 9.6

Tab. (12) Liver Functions after AHB (in relation to Schistosomal activity)

a ≠ d insig. b ≠ e Insig c ≠ f Insig. (P > 0.05)

	1 m.		3 m.		6 m.		9 m.		12 m.	
Schistosomal Alk. phosphatase (a)	312	± 46	281	± 40	286	± 25	156.5	± 30	148.5	± 27
Prothrombin %(b)	70%	± 10	68%	± 12	63%	± 11	72%	± 8	75%	±9
Non Schistosomal Alk. phosphatase (c)	321	± 51	296	±46	175	± 18.5	118	± 21.5	86	± 9.2
Prothrombin %(d)	75%	± 11	73%	± 8.5	78%	± 11.6	79%	± 13.5	85%	±12.1

Tab. (13) Liver Functions after AHB (in relation to Schistosomiasis)

a ≠c insig. b ≠ d Insig (P > 0.05)

Liver function	Schistosomal		Non-Schistosomal		Sig.
	Mean	S.D.	Mean	S.D.	
S.bilrnubine	1.3	±0.4	0.8	± 0.2	Insig. P > 0.05
SGOT	85	± 8.6	42.7	± 6.7	Insig. P > 0.05
SGPT	72	± 9.6	40.8	± 6.1	Insig. P > 0.05
Alkaline Phosphatase	148.5	± 27	86	± 9.2	Insig. P > 0.05
Prothrombin	75%	± 9	85%	± 12.1	Insig. P > 0.05

Table (14) : Liver functions at the end of follow up .

Liver function	Treated Schistosomal gp.		Untreated Schistosomal gp.		Sig.
	No. = 23 pts.		No. = 11 pts.		
	Mean	S.D.	Mean	S.D.	
Serum bilinubine	1.1	±0.2	1.3	± 0.1	Insig. P > 0.05
SGOT	41.5	± 7.2	115.5	±18.5	Sig. P < 0.05
SGPT	38.7	± 5.6	98.6	±12.5	Sig. P< 0.05
Alkaline Phosphatase	87.5	±11.3	156	±21.5	Insig. P > 0.05
Prothrombin	75%	± 10.5	76.8	± 9.3	Insig. P > 0.05

Tab. (15) Liver functions at the end of follow up in relation to Antischistosomal treatment.(Treatment taken was praziquantil at 3 month).

Viral marker	Schistosomal group				Non-Schistosomal group			
	1 m.	3	6	12	1	3	6	12
HBSAg (+)	50	31	23	11	50	16	6	3
Anti - HBS (+)	Zero	4	31	41	zero	6	38	43
Anti- HBC (IgM) (+)	31	34	12	2	42	28	8	1
HBe - Ag (+)	31	23	18	6	22	7	2	zero
Delta Antigen (+)	8	22	5	zero	3	9	zero	zero

Tab. (16) Collective Results of viral markers.

Duration.	Persistent (HBSAg) Antigenaemia	
1 m.	$100/_{100}$	= 100 %
3 m.	$47/_{100}$	= 47%
6 m.	$29/_{97}$	=29.9%
12 m.	$14/_{85}$	= 16.5 %

Tab. (17): Persistent HBS Antigenaemia after AHB during the follow up (In Schistosomal & Non- Schistosomal patients) .

	1	3	6	12
Schistosomal	$50/_{50}$ = 100%	$31/_{50}$ = 62%	$23/_{47}$ = 48.9%	$11/_{40}$ = 27.5%
Non-Schistosomal	$50/_{50}$ = 100%	$16/_{50}$ =32%	$6/_{50}$ = 12 %	$3/_{45}$ = 6.7 %
Sig.	Insig. P > 0.05	H. Sig. P < 0.01	H. Sig. P < 0.01	H. Sig. P < 0.01

Tab. (18) Persistent HBS antigenaemia (in relation to Schistosomiasis)

	1	3	6	12
Active Schistosomiasis	$34/34 = 100\%$	$22/34 = 64.7\%$	$16/32 = 50\%$	$8/30 = 26.7\%$
Inactive Schistosomiasis	$16/16 = 100\%$	$9/16 = 56.3\%$	$7/15 = 46.7\%$	$3/10 = 30\%$
Sig.	Insig. $P > 0.05$	Insig. $P > 0.05$	Insig. $P > 0.05$	Insig. $P > 0.05$

Tab. (19): Persistent HBS Antigenaemia (in relation to Schistosomal activity)

Age group	1	3	6	12
14 - 26 Y.	$48/48 = 100\%$ (a)	$34/48 = 70.8\%$ (a)	$29/48 = 45.8\%$ (a)	$11/39 = 28.2\%$ (a)
27 - 43 Y.	$45/45 = 100\%$ (b)	$11/45 = 24.4\%$ (b)	$5/42 = 11.9\%$ (b)	$2/40 = 5\%$ (b)
44 - 59 Y.	$7/7 = 100\%$ (c)	$2/7 = 28.6\%$ (c)	$1/7 = 14.3\%$ (c)	$1/6 = 16.7\%$ (c)
Sig.	No Differance	$a \neq b$ Sig. ($p < 0.05$) $a \neq c$ Sig. ($p < 0.05$) $b \neq c$ Insig. ($p > 0.05$)	$a \neq b$ Sig. ($p < 0.05$) $a \neq c$ Sig. ($p < 0.05$) $b \neq c$ Insig. ($p > 0.05$)	$a \neq b$ Sig. ($p < 0.05$) $a \neq c$ Insig. ($p > 0.05$) $b \neq c$ Insig. ($p > 0.05$)

Tab. (20) Persistent HBS antigenaemia (in relation to age)

Sex	1	3	6	12
Male.	$61/_{61} = 100\%$	$32/_{61} = 52.5\%$	$24/_{58} = 41.4\%$	$11/_{50} = 22\%$
Female	$39/_{39} = 100\%$	$15/_{39} = 38.5\%$	$5/_{39} = 12.8\%$	$3/35 = 8.6\%$
Sig.	No. Differance	Insig. $P > 0.05$	Sig. $P < 0.05$	Sig. $P < 0.05$

Tab. (21) Persistent HBS antigenaemia (in relation to Sex).

	Treated gp.	Untreated gp.	Sig.
At 6 m.	$9/_{23} = 39.1\%$	$7/_{11} = 63.6\%$	Insig. $P > 0.05$
At 12 m.	$3/_{21} = 14.3\%$	$5/_{10} = 50\%$	Sig. $P < 0.05$

Tab. (22) : Persistent HBS antigenaemia (in relation to schistosomal treatment)

	1m.	3	6	12
Schistosomal	$31/_{50} = 62\%$	$23/_{31} = 74.\%$	$18/_{23} = 78.3\%$	$6/_{11} = 54.5\%$
Non-Schistosomal	$22/_{50} = 44\%$	$7/_{16} = 43.8\%$	$2/_{6} = 33.3\%$	$0/3 = 0.00\%$
Sig.	Sig. $p < 0.05$	Sig. $p < 0.05$	Sig. $P < 0.05$	H. Sig. $P < 0.01$

Tab. (23) : Incidence of e- antigen positive cases amonge HBS-Ag positives (in relation to schistosomiasis)

Schistosomal	Non. Schistosomal.	Sig.
$^{8}/_{50} = 16\%$	$^{3}/_{50} = 6\%$	Sig. $P < 0.05$

Tab. (24) : Incidence of delta co-infection in Schistosomal & non-Schistosomal.

ActiveSchistosomiasis	Inactive Schistosomiasis.	Sig.
$^{6}/_{34} = 17.6\%$	$^{2}/_{16} = 12.5\%$	Insig. $p > 0.05$

Tab. (25) : Incidence of delta co-infection (in relation to schistosomal activity)

Total No.	Schistosomal	Non. Schistosomal	Sig.
29 Pts.	$^{21}/_{31} = 67.7\%$	$^{8}/_{16} = 50\%$	Insig. $p > 0.05$

Tab. (26) Incidence of Delta Super Infection ((in relation to Schistosomiasis)

Total No.	Active Schistosomiasis	Inactive Schistosomiasis.	Sig.
21	$^{181}/_{22} = 81.8\%$	$^{3}/_{9} = 33.3\%$	Sig. $p < 0.05$

Tab. (27) : Incidence of Delta - super infection among Schistosomal group (in relation to Schistosomal activity).

Sex	Delta Co-Infection	Delta super Infection
Male (M)	$9/61 = 14.8\%$	$23/32 = 71.9\%$
Female (F)	$2/39 = 5.1\%$	$6/15 = 40\%$
Sig.	Sig $P < 0.05$	Sig $P < 0.05$

Tab. (28) : Incidence of Delta Co-Infection and Delta - super infection in AHB (in relation to sex)

Liver Function	Delta Co-Inf. gp.		Delta super Inf. gp.		No Delta inf. gp.		Sig.
	No. = 11 Pts.		No = 29 Pts.		No = 57 Pts.		
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Serum bilirubin	8.2	± 1.1	5.5	± 0.9	2.9	± 0.4	Insig.
SGOT	182	± 31.7	181.6	± 27.5	92.5	± 11.0	Insig.
SGPT	192	± 26.5	112.5	± 21.5	89.7	± 10.5	Insig.
Alk. phosphatase	289	± 26.5	290	± 30	281.5	± 31	Insig.
Prothrombine	68.5%	± 11.5	72%	± 8.5	82%	± 13.5	Insig.
							$p > 0.05$

Tab. (29) Liver functions (Mean values) (In relation to Delta Co. & super Infection).

Total No. of Ascitic patients	Delta Co-Inf. gp. No. = 11	Delta super Inf. gp. No. = 29	gp. without Delta Inf. No.= 45
23	$5/11 = 45.5\%$ (a)	$12/29 = 41.4\%$ (b)	$6/45 = 13.3\%$ (c)

Tab.(30) : Incidence of Ascites at the end of follow up.

(in relation to Delta Co & super Infection).

$a \neq b$ Insig. $P > 0.05$ $a \neq c$ Sig. $P < 0.05$ $b \neq c$ Sig. $P < 0.05$.

	1	3	6	12
Schistosomal	$8/_8 = 100\%$	$7/_8 = 87.5\ \%$	$5/_8 = 62.5\ \%$	$2/_5 = 40\ \%$
Non- Schistosomal	$0/_3 = 0\ \%$	$3/_3 = 100\%$	$2/_3 = 66.6\%$	$2/_3 = 66.6\ \%$
Sig.	No difference	Insig. P > 0.05	Insig. P > 0.05	Insig. P > 0.05

Tab. (31) : Follow up of HBS-Ag in delta co - infection group)

	3	6	12
Schistosomal	$11/_{21} = 52.4\%$	$6/_{17} = 35.3\ \%$	$5/_{16} = 31.25\ \%$
Non-Schistosomal	$4/_8 = 50\ \%$	$2/_6 = 33.3\ \%$	$1/_5 = 20\%$
Sig.	Insig. P > 0.05	Insig. P > 0.05	Insig. P> 0.05

Tab. (32) : Follow up of HBSAg in Dleta super-Infection grou

	3	6	12
Delta Co-Infection gp.	$9/_{11} = 81.8\%$ (a)	$7/_{11} = 63.6\%$ (a)	$2/_8 = 25\ \%$ (a)
Delta super-Infection gp.	$15/_{29} = 51.7\ \%$ (b)	$8/_{23} = 34.8\%$ (b)	$6/_{21} = 28.6\%$ (b)
Group Without Delta	$23/_{60} = 38.3\%$	$14/_{63} = 22.2\ \%$	$6/_{56} = 10.7\%$
Sig.	a ≠ b Sig. a ≠ c H. Sig. b ≠ c Insig.	a ≠ b Insig. a ≠ c Sig. b ≠ c Insig.	a ≠ b Insig. a ≠ Insig. b ≠ c Sig.

Tab. (33) : Follow up of HBSAg in Delta Co-infection and Delta super infection groups.

	3	6	9	12
Schistosomal	$0/_{50} = 0\%$	$3/_{47} = 6.5\ \%$	$6/_{45} = 13.3\ \%$	$7/_{46} = 15.2\ \%$
Non-Schistosomal	$0/_{50} = 0\%$	$0/_{50} = 0\%$	$0/_{46} = 0\ \%$	$1/_{45} = 2.2\ \%$
Sig.	Insig. $P > 0.05$	Sig. $P < 0.05$	H.Sig. $P < 0.01$	Sig. $P < 0.05$

Tab. (34) : Incidence of Bleeding oesophageal varices during the follow up (in relation to schistosomiasis) .

	6 m.	12 m.
Delta Co-infection gp.	(a) $2/_{11} = 18.2\%$	$4/_{8} = 50\%$ (a)
Delta super - infection gp.	(b) $1/_{23} = 4.3\ \%$	$3/_{21} = 14.3\ \%$ (b)
Groupwithout Delta inf.	(c) $0/_{63} = 0\ \%$	$1/_{56} = 1.8\ \%$ (c)
Sig.	$a \neq b$ Insig. $p > 0.05$ $a \neq c$ Sig. $p < 0.05$ $b \neq c$ Insig. $p > 0.05$	$a \neq b$ Sig. $p < 0.05$ $a \neq c$ H. Sig. $p < 0.01$ $b \neq c$ Sig. $p < 0.05$

Tab. (35) : Incidence of bleeding oesophageal varices (in relation to Delta affection).

	CPH		CAH		Cirrhosis		Resolved Hepatitis		CAH + Cirrhosis		Bilharzial fibrosis	
No.	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Schistosomal No. = 50	13	26	17	34	7	14	-	0	5	10	8	16
Non Schistosomal No = 50	11	22	3	6	-	-	36	72	-	-	-	-
Sig.	Insig. P > 0.05		H. Sig. P < 0.005		Sig. P < 0.05		Sig. P < 0.05		Sig. P < 0.05		Insig. P > 0.05	

Tab. (36) Results of liver histopathology after AHB (in relation to Schistosomiasis .

Schistosomal		Non-Schistosomal		Sig.
No.	%	No.	%	Highly
17	34	3	6	Sig. P < 0.01

Tab. (37) Incidence of CAH after AHB (in relation to Schistosomiasis) .

Treated gp.	Non-treated gp.	Sig.
Total No. = 23	Total No. = 11	Insig.
$^{7}/_{23} = 30.4$	$^{3}/_{11} = 27.3\%$	P > 0.05

Tab. (38) Incidence of CAH after AHB In Schistosomal Patients (in relation to Anti-Schistosomal treatment).

	CAH with persistent HBS-Antigenaemia	CAH without HBS-Antigenaemia	Sig.
Schistosomal	$^{13}/_{23}$ = 56.5%	$^{4}/_{24}$ = 16.7%	H.Sig. P < 0.01
Non-Schistosomal	$^{2}/_{6}$ = 33.3%	$^{1}/_{44}$ = 2.3%	Sig. p < 0.05

Tab. (39) Incidence of CAH after AHB (in relation to persistent HBS Antigenaemia)

CAH in the Delta Co-infection gp.	CAH in the Delta Superinfection gp.	CAH in the gp. without Delta Inf.
(a)	(b)	(c)
$^{4}/_{11}$ = 36.4 %	$^{10}/_{29}$ = 34.4 %	$^{6}/_{60}$ = 10 %
a ≠ b	Insig. P > 0.05	
a ≠ c	Sig. P < 0.05	
b ≠ c	Sig. P < 0.05	

Tab. (40) Incidence of CAH after AHB (in relation to Delta affection)

	CAH with e-antigen positive gp.	CAH with e-antigen negative gp.	Sig.
Schistosomal	$^{14}/_{18}$ = 77.8%	$^{3}/_{5}$ = 60%	Insig. P > 0.05
Non-Schistosomal	$^{1}/_{2}$ = 50%	$^{2}/_{4}$ = 50%	Insig. P > 0.05

Tab. (41) Incidence of CAH after AHB (in relation to e-antigen) .

	3	6	9	12
Schistosomal	$^{0}/_{50}$	$^{3}/_{50}$ = 6 %	$^{3}/_{48}$ = 6.3%	$^{6}/_{46}$ = 13%
Non-Schistosomal	$^{0}/_{50}$	$^{0}/_{50}$ = 0 %	$^{0}/_{46}$ = 0%	$^{0}/_{45}$ = 0%
Sig.	Insig.	Sig. P < 0.05	Sig. P < 0.05	H. Sig. P < 0.01

Tab. (42) Mortality following AHB during the follow up period.
(in relation to Schistosomiasis)

	Schistosomal		Non-Schistosomal		
No.of patients	%	No. of Pateints	%	Significance	
* **Complete Recovery**	$^{7}/_{46}$	15.2	$^{23}/_{45}$	51.1	Significant
***Hepatosplenomegaly**	$^{32}/_{40}$	76.2	$^{7}/_{45}$	15.6	Highly Sig.
***with Ascites**	$^{21}/_{40}$	46.7	$^{2}/_{45}$	4.4	Highly Sig.
* **with Abnormal liver functions**	$^{25}/_{40}$	62.5	$^{7}/_{45}$	15.6	Significant
* **HBS-Ag (+ve)**	11	27.5	3	6.7	Highly Sig.
* **HBe-Ag (+ve)**	$^{6}/_{11}$	54.5	0	0	Highly Sig.
* **Asymptomatic HBS-Ag carriers**	$^{2}/_{40}$	5	$^{1}/_{45}$	2.2	Insignificant
* **Histopathology**	(No = 50)		(No = 50)		
- Chronic Active hepatitis	17	34%	3	6	Highly Sig.
- CAH + Cirrhosis	5	10	0	0	Significant
- Chronic persistent Hep.	13	26	11	22	Insignificant
- Resolved hepatitis	Zero	Zero	36	72	Significant
- Cirrhosis	7	14%	0	0	Significant
***Bleeding oesophageal varices**	$^{7}/_{46}$	15.2	$^{1}/_{45}$	2.2	Significant
* **Mortality Rate**	$^{6}/_{46}$	13%	$^{0}/_{45}$	0%	Highly Sig.

Tab. (43) The outcome of one year follow up.(Comparisone between schistosomal and non-Schistosomal groups) .

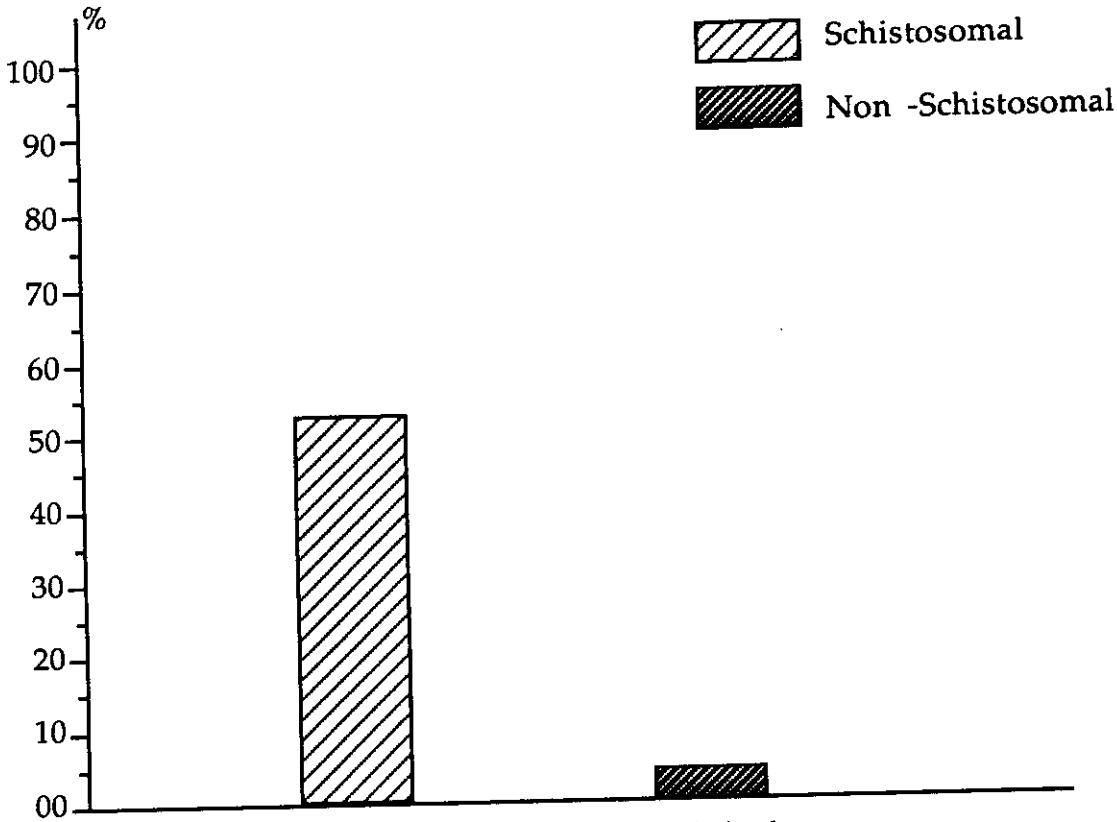

Fig. (1) : Development of ascites (%) after one year

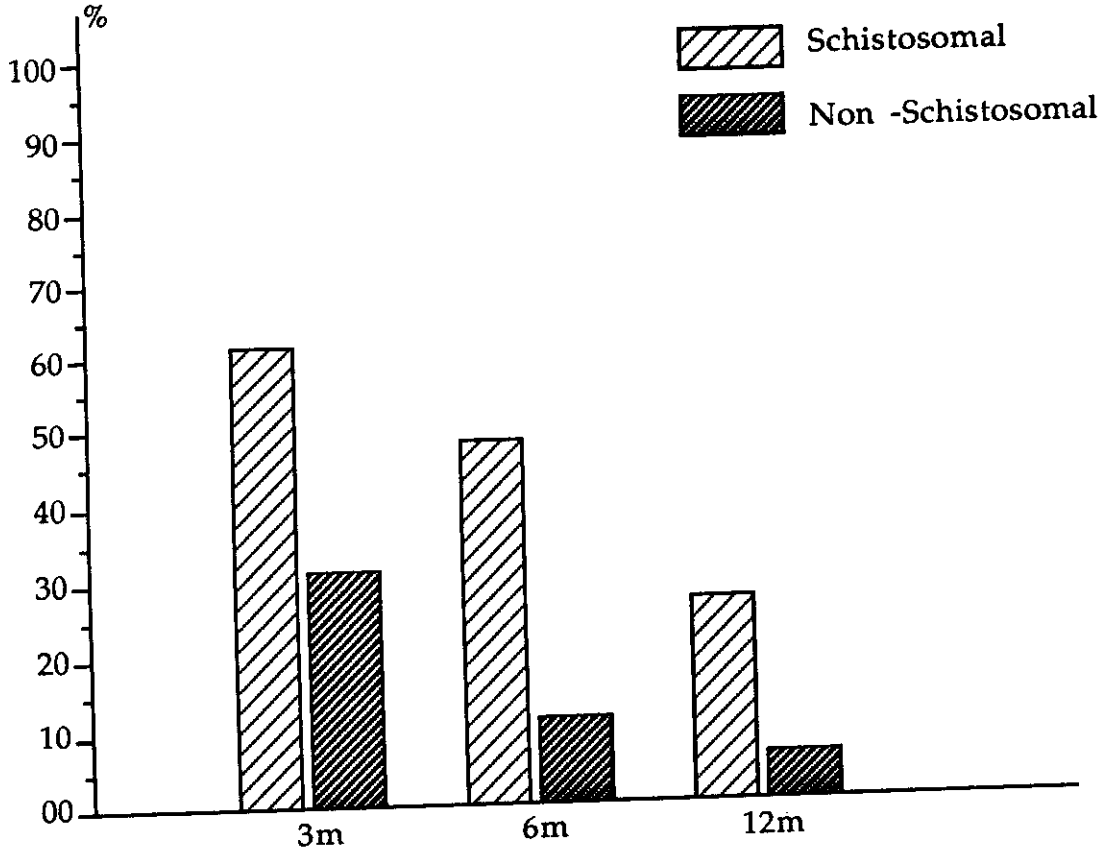

Fig. (2) : Persistent HBSAg antigenaemia in schistosomal and non- schistosomal patients

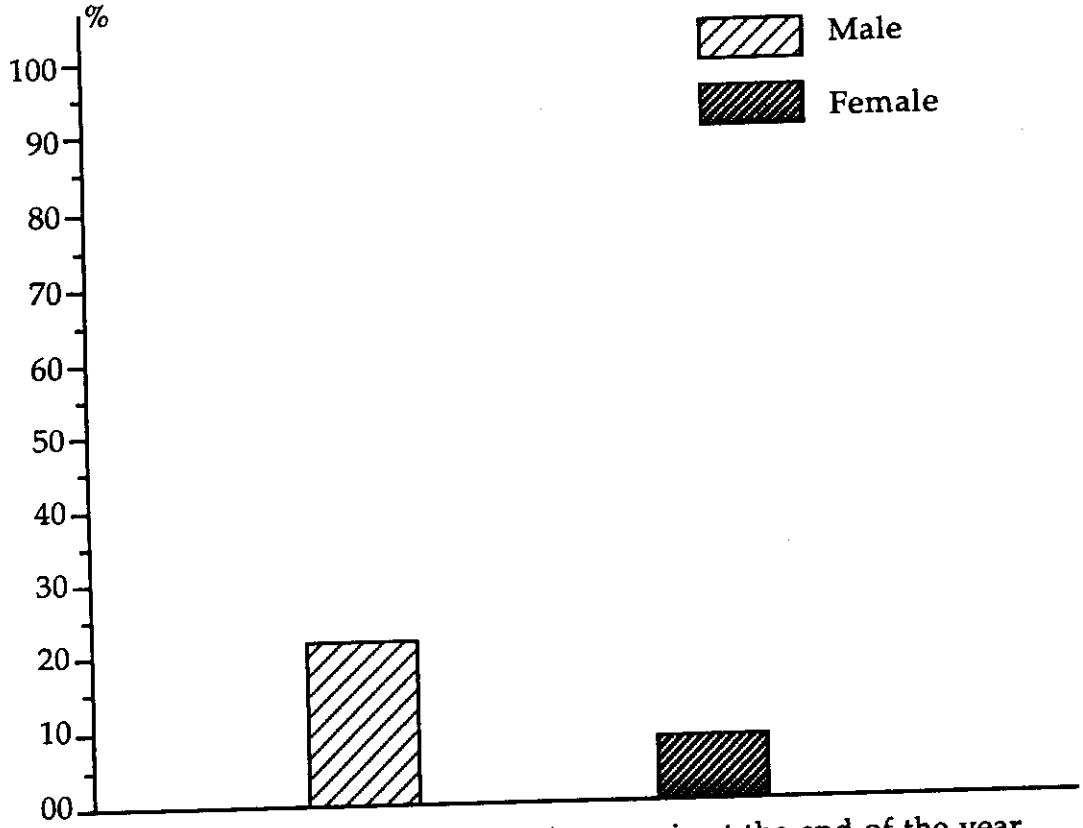

Fig. (3) : Persistent HBS antigenaemia at the end of the year (in relation to sex)

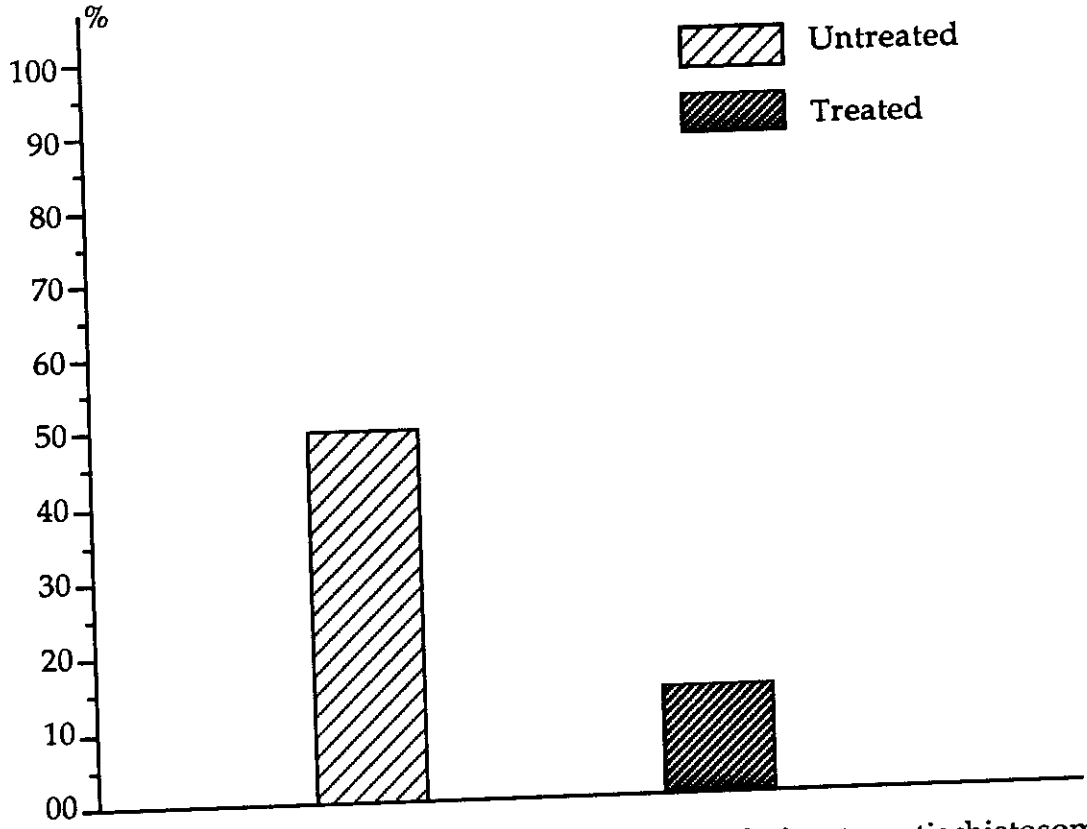

Fig. (4) : Persistent HBS antigenaemia in relation to antischistosomal treatment (after one year)

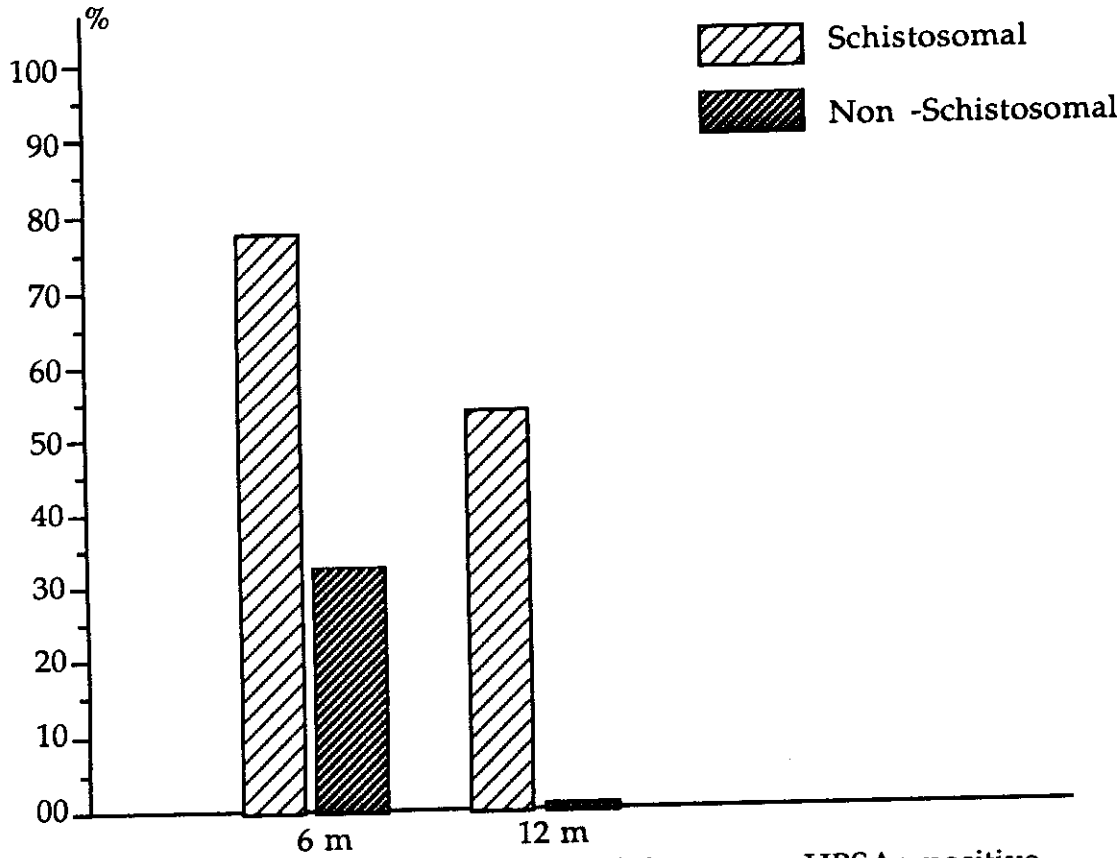

Fig. (5) : Incidence of e-antegin positivity among HBSAg positive patients. (in relation to schistosomiasis.

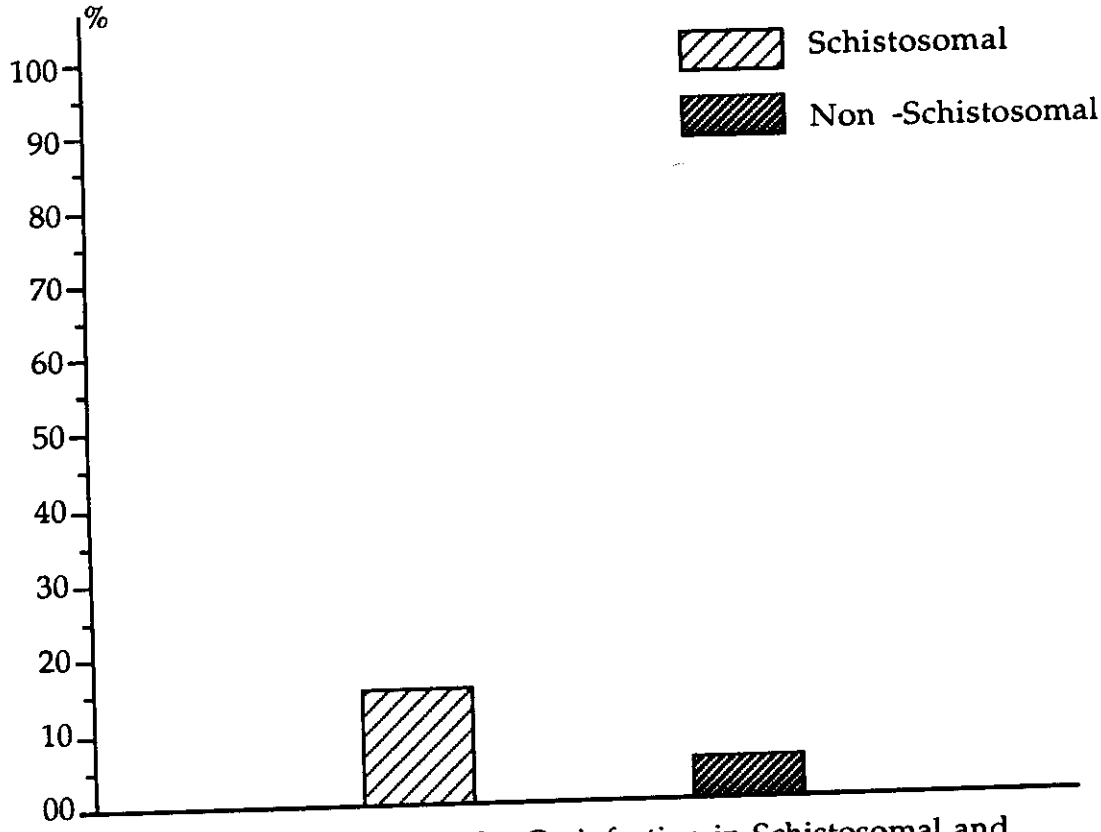

Fig. (6) : Incidence of Delta Co-infection in Schistosomal and Non- Schistosomal patients .

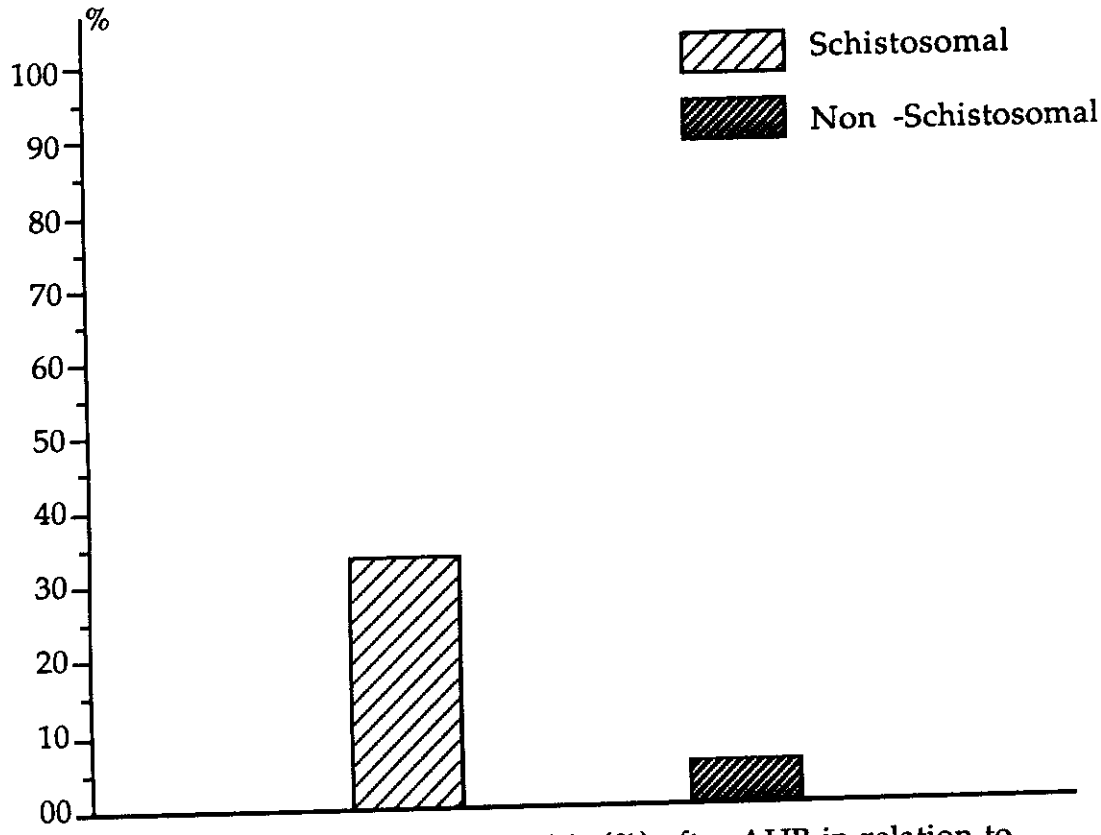

Fig. (7) : Chronic active hepatitis (%) after AHB in relation to Schistosomiasis .