SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

The present work is a follow up study for 12 months. It was conducted on 60 Egyptian infants and children receiving repeated blood transfusions for long period or smaller number of blood transfusions beside continous parenteral injections for treatment for long period. Their ages ranged between 6 months to 15 years with mean of 5.4 years and included 27 cases of thalassaemia, 29 cases of acute leukemia and other malignancies and 2 cases of idiopathic thrombocytopenic purpura and 2 cases of sickle cell and hypoplastic anaemias. Another group of 60 normal infants and children of the same age and socioeconomic class with no history of previous blood transfusions or continous parenteral injections, also without present or past history of liver affection as jaundice and change of colour of urine and stools, this group was taken as control group.

Every month, a full history and thorough clinical examination was done for each case. Laboratory investigations done included complete hemogram, bilirubin level, total, direct and indirect. Serum transaminases were done for those gave history of jaundice or presented with jaundice.

Search for HBsAg by ELISA technique was performed on sera of all control cases and polytransfused cases on the first and last samples. Then the sera gave positive HBsAg were investigated for delta antigen in the first and last samples and for anti-delta in the last sample using ELISA technique to assess the frequency of delta infection among Egyptian polytransfused patients and those taking continous parenteral injections in comparison with the normal cases.

- The incidence of HBsAg among normal Egyptian infants and children was 8.3% which was close to other investigators in Egypt, and it was found to be 6.7% of the diseased cases in case of the first sample and increased markedly after one year to reach 41.7% in the last sample being (11.1%, and 44.4%) in case of thalassaemics and (3.5% and 41.4%) in case of acute leukemias and other malignancies in the first and last samples respectively indicating that the incidence of HBV infection increase with increased amount of blood transfused or parenteral injections. One case of sickle cell anaemia gave positive HBsAg.

Our results agree with others in Egypt and elsewhere.

- The total incidence of anti-delta among cases of HBsAg positive in the diseased cases (high risk group) was found to be 60% of HBsAg carriers, being 66.7% in thalassaemics and 58.3% in the group of acute leukemia and other malignancies and was not reported in the third group representing I.T.P., sickle and hypoplastic anaemias.

Our results are in agreement with that obtained by other investigators in other countries.

- The delta antigen was detected in one case only during the first sample and disappeared in the last sample, where anti-delta was detected. The case was male, aged 4 years, suffering from thalassaemia. This is in agreement with other investigators.

- Delta hepatitis infection was not detected in the normal cases in this study, but other investigators detected delta hepatitis in normal cases (HBsAg carrier) in Egypt.

- In the present study, there was higher incidence of HBsAg and anti-delta in females than males, but the differences were statistically insignificant.
Other workers found higher incidence in males.

- The ages of cases giving positivity for HBsAg and anti-delta were between 1½ - 10 years with mean of 4.3 in case of HBsAg positivity and 4.7 in case of anti-delta infection which was correlated with other workers.

- There was significant relation between HBV and delta hepatitis infection and the increase level of bilirubin and serum transaminases. HBsAg was found in 71.4% and delta hepatitis associated with HBV in 66.6% in cases with jaundice, increase bilirubin and transaminases. The ratio of icteric to non icteric cases was 3:2 in cases positive for HBsAg and 2:1 in cases positive for anti-delta. Our results are correlated with other investigators in Egypt, as regards the level of bilirubin but differ from them as regards level of transaminases, but our results are in agreement with others elsewhere.

- There is significant difference between these cases affected with delta infection and those without delta hepatitis, in causing hepatomegaly indicating that delta hepatitis has an important role in the eatiology of hepatomegaly among Egyptian infants and children. But there was no different effect on causing splenomegaly.

- There was correlation between the number, duration, and amount of blood transfused and the incidence of hepatitis B virus infection (HBV) and delta hepatitis infection.

An intresting observation is that, those were affected with delta hepatitis associated with hepatitis B virus infection were found to take larger number and amount of blood and for longer duration than those with hepatitis B virus infection only, suggesting that among polytransfused HBsAg carriers, the δ-associated agent was transmitted by superinfection on HBsAg carriers among our cases.

- There was high significant difference between cases taking continous parenteral injections and the normal control cases indicating that delta hepatitis infection is common and has an important role in the liver disease in patients receiving drugs parentrally.

But there is no statistical significant difference was detected between those taking blood transfusions and those taking continous parentral injections, indicating that both parentral injections and blood transfusions play an important role in transmitting delta hepatitis, but it was found that the incidence of delta hepatitis was more in those taking repeated blood transfusions (66.7%), while it was (58.3%) of HBsAg carriers in case of continous parentral injections.

- It is evident that there is high staitstical significant difference between the normal cases and those taking

repeated blood transfusions and continous parentral injections indicating that In Egypt, delta agent is transmitted by parentral route and has an important role as a cause of liver disease in polytransfused infants and children and those taking drugs parentrally.

The only hope at present is in prophylaxis. Elimination of the HBsAg population predisposed to become carriers of the agent implies prevention of delta infection.

- The following recommendations may be suggested to prevent or minimize the risk of hepatitis B infection and accordingly delta hepatitis infection:

1. Screening for HBsAg carriers in cases got jaundice, hepatomegaly, and increased serum transaminases.
2. It is important to know HBV carriers of blood donors to be excluded from donating blood.
3. Using sterilized needles during injections and vaccination.
4. Vaccination against hepatitis B and its widespread application, at present seems the only feasible method to control δ infection, especially to polytransfused children and those with malignancies.