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# Post transfusion hepatitis—A prospective study

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**Post-transfusion hepatitis was recorded in three of 18 patients followed up for a period of 7·3±1·9 months after multiple blood transfusions. Hepatitis B virus (HBV) was the etiological agent in 2 patients while the third had non-A non-B virus infection. The incidence of post-transfusion hepatitis increased with increasing number of units of blood transfused and transfusion of commercial donors' blood. This study indicated a high post-transfusion hepatitis rate due to HBV in India.**

Epidemiology and etiology of post-transfusion hepatitis has changed considerably during the last 15 yr. Today in most of the developed countries, post-transfusion hepatitis is almost exclusively due to non-A non-B (NANB) hepatitis virus infection with almost complete elimination of hepatitis B virus (HBV) as the etiological agent[1]. The behaviour of post-transfusion hepatitis in developing countries is not known. A retrospective study revealed that post-transfusion HBV infection poses a major health problem even in a major Indian hospital like the AIIMS (unpublished data). A prospective study was therefore carried out to confirm the findings of the earlier retrospective study.

## Material & Methods

Eighteen patients (12 males and 6 females) aged 14-42 yr, who underwent vascular surgery for portal hypertension were followed up for 6 to 12 months. Eight patients were operated for non-cirrhotic portal fibrosis (NCPF) and ten for extrahepatic portal vein obstruction (EHO). The patients were examined clinically and their blood samples tested for liver functions and HBV-markers within 15 days before operation and 15 days, one month, three months and six months after operation. Liver function tests (LFT) were carried out by standard techniques.

HBsAg was tested in sera samples by micro-ELISA technique[2]. HBeAg was tested in HBsAg positive samples by Abbott's HBe-EIA kit. DNA-polymerase was tested in HBsAg positive patients and in a patient of acute non-B hepatitis by modified technique of Fang *et al*[3]. Anti-HBc IgM was tested by core-zyme-M kit from Abbott's Laboratory, USA.

## Results & Discussion

Post-transfusion follow up was for 7·3±1·9 months (range 6 to 12 months).

Preoperatively 12 patients had received mixed (commercial and voluntary donor) blood (12·2±7·3 units) while one had received 4 units from the AIIMS blood bank (voluntary donors). During operation all 18 patients received blood (3·7± 0·7 units) from voluntary donors.

The base line and follow up data on LFT status and HBV-markers are shown in the Table. All patients had normal base line LFT with one being HBsAg positive but anti-HBc IgM and serum DNA polymerase activity negative. At 6 months, LFT remained normal in all the patients. Two of them were found to be HBsAg positive; one was a HBsAg carrier before operation and the other had acute HBV infection. The latter patient with acute post-transfusion HBV infection did not show HBsAg during the further follow up period. Three of the eighteen patients developed acute hepatitis. In two it was due to HBV infection while the third had NANB hepatitis virus infection.

**Table.** Status of HBsAg positivity and liver function tests (LFT) before and after operation

(Data are for 18 patients)

| | Before operation | After operation, months | | | |
|---|---|---|---|---|---|
| | | 15 days | 1 | 3 | 6 |
| Abnormal LFT | 0 | 0 | 2 | 1 | 0 |
| HBsAg positive | 1 | 3 | 3 | 2 | 2 |

Occurrence of post-transfusion hepatitis in the present study was significantly more than the reported incidence of 7 per cent[4]. None of the patients who received voluntary donors blood (HBsAg negative) developed post-transfusion hepatitis, while 3 of 12 who received commercial blood along with voluntary donors blood developd post-transfusion hepatitis. Blood is always in short supply in India and often the choice is between acceptance of blood from private blood banks (often collected from commercial donors without screening for HBsAg by sensitive tests) and risking the consequence of denying blood transfusion to seriously ill patients due to massive gastrointestinal bleeding and other causes. It is estimated that less than 50 per cent of blood used in large hospitals in India is being screened for HBsAg (mostly by counter immunoelectrophoresis) and nearly 40 per cent of the blood is obtained from commercial blood donors.

Blood transfusion is thus an important cause of HBV transmission in India. All efforts should therefore be made to implement the policy of voluntary blood donation and HBsAg screening of the donors by the micro-ELISA technique. It may also be advisable to administer a prophylactic dose of ISG or ISG-rich HBsAg antibody to at least those who receive commercial donors blood[5], till such a time that HBsAg negative voluntary donors blood becomes freely available in India.

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