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Immunoprophylaxis of epidemic non-A non-B hepatitis

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A trial was carried out in an epidemic of non-A non-B hepatitis using a single dose of human immune serum globulin, produced locally, for prophylaxis. Anicteric hepatitis was observed in 0·8 per cent of the group which received immunoglobulin as against 2·5 per cent of control group who did not receive it.

Epidemics of non-A non-B (NANB) hepatitis have been recognised as a common public health problem in India[1,2]. Adequate information on the characteristics of NANB virus(es) is not available. Therefore, effective methods for its control have yet not been developed. This trial was conducted in the subsiding phase of an epidemic of NANB hepatitis to find out the prophylactic value of a single dose of immune serum globulin for contact spread of the disease. Our earlier study of an epidemic of NANB hepatitis has demonstrated a second peak of high prevalence specially amongst the family members of the hepatitis cases[2].

Material & Methods

An epidemic of jaundice was recorded in a training camp of a para-military organisation in northern India, in September, 1981. The battalion had 845 men including officers and recruits. There were seven barracks and four kitchens. Water from a canal passing by was used for washing purposes. Within four weeks, 206 men (from all the barracks) were registered with the clinical features of acute viral hepatitis. Liver function tests in them were suggestive of acute viral hepatitis. All were negative for anti-HAV IgM and only 4 per cent were positive for HBsAg, both tested by ELISA technique.

The remaining 639, who did not develop any features of hepatitis were labelled as contacts. All these were equally exposed to the same environment and had the same chance of acquiring the infection. They were evaluated clinically and by liver function tests. Thirty three of these had elevated transaminases and hence were diagnosed as patients of anicteric hepatitis. The remaining 606, included in the study, were divided into two groups : group I-316 men and group II-290 men. Division of groups I and II was based on alternative patients being placed in either of the group.

Group I was given 2 ml of 16·5 per cent solution of commercially available

immune serum globulin (Human Normal Immunoglobulin, Curewell, India) while group II was not given any injection. Both the groups were followed up at intervals of one, three, six and eleven months. During the first three visits all were evaluated clinically and biochemically, while the last one was only a clinical follow up.

Results & Discussion

From 316 men who were given gamma globulin, 262 were followed up, of these two (0·8%) had laboratory evidence of anicteric hepatitis (raised SGOT/SGPT) during the first month. A total of 287 of 290 from group II were followed up and seven (2·5%) of them had anicteric hepatitis. The difference was not statistically significant. Further follow up at three and six months did not show any clinical or biochemical abnormality. Transaminases in those nine with anicteric hepatitis remained normal during subsequent follow up. At 11 months also, none had any clinical evidence of chronic liver disease.

Though statistically not significant, the incidence of anicteric hepatitis was three times more in the control group compared to the immunised group. As both the groups included young recruits in good health and nutritional status, and exposed to the same environment, host and environmental factors are unlikely to influence the occurrence of anicteric hepatitis in either of the groups. However, the factors which could have influenced the results are late administration of immune serum globulin (6 wk after onset of outbreak) and low dose of immune serum globulin as the adequate dose is not known.

NANB hepatitis is a major health problem in India, both in epidemic and sporadic form and little is known about utility of other preventive measures. It would be advisable to use immune serum globulin for prophylaxis particularly during water-borne epidemics and simultaneously carry out investigations to find out if a higher dose of the globulin in pre-exposure stage or early phase of exposure will be more effective for immunoprophylaxis of NANB hepatitis.

References

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