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transfusion NANBH received one or more anti-HBc positive blood products, as compared with 67/374 (18%) of recipients without NANBH.[4] These observations do not suggest that, in the Netherlands, donor testing for anti-HBc would help to prevent post-transfusion NANBH.

Could elimination of false-positive ELISA results in seroconverters affect the sensitivity and specificity of anti-HCV and transaminase testing? The sensitivity and specificity that we calculated (67% and 93%, respectively, for anti-HCV and 78% and 64% for ALT) were based on clinical disease prevented and are thus independent of non-specific anti-HCV reactivity in recipients.

We conclude that testing by RIBA adds to the specificity of anti-HCV testing but at some loss of sensitivity. RIBA is not a true confirmatory test; nonetheless a positive RIBA result is a very specific co-factor for infectivity of anti-HCV ELISA positive blood. The incorporation of additional HCV antigens might add to the value of the RIBA test system.

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1. Van der Poel CL, Reesink HW, Lelie PN, et al. Anti-hepatitis C antibodies and non-A, non-B post-transfusion hepatitis in the Netherlands. *Lancet* 1989; ii: 297–98.
2. Van der Poel CL, Reesink HW, Lelie PN, et al. Infectivity of blood seropositive for hepatitis C virus antibodies. *Lancet* 1990; 335: 558–60.
3. Ebeling F, Naukkarinen R, Leikola J. Recombinant immunoblot assay for hepatitis C antibody as predictor of infectivity. *Lancet* 1990; 335: 982–83.
4. Reesink HW, Leentvaar-Kuypers A, Van der Poel CL, et al. Non-A, non-B posttransfusion hepatitis in open heart surgery patients in the Netherlands: preliminary results of a prospective study. In: Zuckerman AJ, ed. Viral hepatitis and liver disease. New York: Alan R Liss, 1988: 558–60.

Antibody to hepatitis C virus in plasma pools

SIR,—Transfusion centres in several countries have introduced screening of blood donations for antibody to hepatitis C virus (HCV) and have reported significant reductions in transmission of non-A, non-B hepatitis.[1] The value of the test in ensuring the safety of medicinal products derived from blood remains to be established, however. We report here the results of tests with the Ortho Diagnostics anti-HCV ELISA on plasma pools from which such products are prepared.

87 plasma pools ranging in size from 500 to 25 000 donations were examined. 46 were from American manufacturers, 37 from manufacturers in the UK, 2 from Swedish sources, and 2 from Austria (these being known to include plasma from American donors). 538 individual plasma samples from donors attending transfusion centres in the UK were also tested.

41 of the American pools and the 2 "Austrian" pools were strongly positive, giving similar, high readings to a known positive single donor serum from the Netherlands which constitutes a standard hepatitis B antiserum and with an optical density (OD) of 2·70. None of the pools from the UK or Sweden was positive. A US factor VIII preparation was also tested and was negative but the pool from which it was prepared was almost certainly positive:

Origin	*Proportion positive*	*Mean OD of positives**
UK	0/11	..
UK	0/26	..
Sweden	0/2	..
Austria	2/2	1·86
USA	20/22	2·76
USA	21/24	2·12

*Optical density (OD) 0·4 indicates positivity.

2 of 538 donations from UK sources were positive, a frequency of 0·4% consistent with previously reported figures. The readings for the 2 positive donations (OD 0·69 and 0·83) were far lower than those from the US plasma pools.

The high positivity of the US plasma pools might be due to false positives but we know of no difference between the treatment of American and European plasma pools that would account for the difference seen. Another possibility is that the Ortho/Chiron test detects antibodies induced by American strains of HCV more effectively than it does antibodies induced by European strains. The third possibility is that the US pools contain a very high proportion of strongly positive donations. When a positive pool and a positive UK donation were titrated in parallel, antibody was undetectable in both at dilutions of 1 in 10. It is therefore not surprising that the UK pools were found to be negative. Our findings imply that the prevalence of positive donations in the American pools is very high, possibly approaching 100%. This may reflect the fact that in the US plasma for blood products often comes from paid donors. Examination of pools for HCV RNA is planned.

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1. Editorial. Hepatitis C virus upstanding. *Lancet* 1990; 335: 1431–32.

Safety of monoclonal antibody purified factor VIII

SIR,—The evidence in Dr Berntorp and colleagues' letter (June 23, p 1531) suggesting that non-A, non-B hepatitis (NANBH) was associated in one haemophilia patient with the administration of 'Monoclate' is incomplete and disregards published data on the safety of monoclonal antibody purification.

Of the three lots of monoclate that the boy received, two could be readily eliminated as a causal agent because a second hepatitis-negative boy did not acquire NANBH when he received the same two lots. The third suspect lot was traced, in an attempt to identify another "virgin" or at least hepatitis-negative patient, but none could be found. An aetiological association could not therefore be either confirmed or ruled out.

There is little question that the child did have NANBH, but hepatitis C may be acquired in several ways.[1]

Armour's decision to change to a pasteurised version of monoclate antedated this report by over a year and was in response to worldwide marketing requirements. In a longitudinal multicentre study of twenty lots of monoclate among 39 virgin patients with haemophilia, none met the accepted criteria for NANBH.[2] Furthermore, none of 33 for whom samples were available had seroconverted to anti-HCV positivity after at least 6 months (unpublished).

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1. Alter MJ, Gerety RJ, et al. Sporadic non-A, non-B hepatitis: frequency and epidemiology in an urban US population. *J Infect Dis* 1982; 145: 886–93.
2. Lusher JM, Salzman PM, et al. Viral safety and inhibitor development associated with factor VIII:C ultra-purified from plasma in hemophiliacs previously unexposed to factor VIII:C concentrates. *Hematol* 1990; 27 (suppl 2): 1–8.

Exophiala dermatitidis infection in cystic fibrosis

SIR,—*Exophiala dermatitidis (Wangiello dermatitidis)* is a rare isolated agent of phaeohyphomycosis, causing infections ranging from the subcutaneous to severe systemic manifestations.[1] This "black yeast" is normally encountered in tropical or subtropical areas.[1,2] We isolated this fungus incidentally from the sputum of a 5-year-old girl with cystic fibrosis (CF). This finding was confirmed by repeated isolations during the ensuing 8 months. Because this girl had round mottling in the parahilar region, atypical of CF and not responding to antimicrobial chemotherapy, we decided to try amphotericin B (up to 0·5 mg/kg per day) and 5-fluorocytosine (150 mg/kg per day) over 6 weeks. The patient