intravenous dose of a modified haemoglobin solution. They strongly suggested that modified haemoglobin solutions should not be used as blood substitutes in view of the risk of fulminating sepsis. We have carried out a similar study with a completely different outcome. A polymerised human haemoglobin solution (polyHbXl, developed at the Central Laboratory of the Netherlands Red Cross Blood Transfusion Service) was tested in a mouse infection model (12 animals) at a single intravenous dose of 15 mL/kg. An equivalent dose of human albumin solution served as control (12 animals). 8×10^5 E. coli 018 K1 (gift from E. Griffiths) was inoculated intravenously 1 h after the test solution, and the number of viable organisms in several organs was measured (table). No difference was found in bacterial numbers between polyHbXl-treated and control mice and all animals survived. The sensitivity of a comparable infection model in response to various modifiers has been shown previously.1 The discrepancy between our findings and those of Griffiths et al may be due to differences between the haemoglobin solutions in purity, or stability of tissue bacterial infections is a real hazard of haemoglobin-based blood substitutes.

Jan A M Langermans,* Wim K Bleecker
Department of Infectious Diseases, University Hospital, Leiden, and
*Central Laboratory of the Netherlands Red Cross Blood Transfusion Service,
PO Box 9406, 1006 AK Amsterdam, Netherlands


Increased urinary dipeptidyl peptidase IV activity in extrahepatic biliary atresia

Sir—Extrahepatic biliary atresia (EHBA) occurs in 1 in 10 000 to 1 in 20 000 live births. Survival of patients with EHBA increased substantially after the description of portoenterostomy by Kasai et al.1 Successful re-establishment of bile flow and long-term survival after a Kasai operation depends on the age at the time of surgery.2 Patients who cannot be treated with a Kasai procedure or who develop symptoms of hepatic failure due to the long-term consequences of recurring cholestasis are treated with liver transplantation, an operation not available in some countries. In Japan, a programme has been developed to inform parents of patients to routinely watch for signs of cholestasis (white stool) and immediately seek help. It was hoped that this strategy would lead to earlier diagnosis of EHBA and to timely Kasai operations. However, recent evaluation of the programme did not show improvement in the age of patients at the time of Kasai surgery, strongly indicating that a specific and easy-to-perform test is necessary for early diagnosis of EHBA.

We tested the proteolytic enzyme, dipeptidyl peptidase IV (DPPIV), also known as CD26, in the urine of control and EHBA patients. DPPIV is present on the brush border of the bile canaliculi, renal tubules, and gut epithelium and on the surface of some haemopoietic and T-lineage cells. Urine samples were collected from 35 healthy individuals at 2–8 weeks of age and from 4 EHBA patients (6–8 weeks). Urine samples of 2 EHBA patients were analysed at different time points before Kasai surgery. All patients were jaundiced at the time of DPPIV measurements. EHBA was diagnosed by