HUMAN IMMUNODEFICIENCY VIRUS (HIV)
INFECTION FOLLOWING TRANSFUSION OF SCREENED BLOOD IN
ACCRA, GHANA

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Introduction

The human immunodeficiency virus (HIV) can be transmitted by blood transfusion from an infected donor. Patients requiring repeated transfusions such as patients with haemophilia or sickle cell disease for example are at risk of acquiring HIV in this way. For this reason donated blood is screened for antibodies to HIV before use. This screening procedure is now routinely performed at the Korle Bu Teaching Hospital, Accra. However, HIV can very rarely be acquired through transfusion of blood that was negative on screening, and we would like to report a possible case in a child with sickle cell disease.

Case Report

E.A., a 4 year old child with sickle cell disease (haemoglobin SS type) was admitted to the Children's Block of the Korle Bu Teaching Hospital, Accra, in early October 1989, suffering from severe anaemia. His haemoglobin was 4.5 grams per cent and he was transfused with one unit of blood. At that time there were facilities for screening for HIV available in the Blood Bank. When he was seen there was no enlargement of lymph glands, but there was hepatosplenomegaly. He had a febrile episode at the end of October, 1989 but was more or less well, until the beginning of January, 1990, 12 weeks after the transfusion, when he presented with a cough, pharyngitis, enlarged cervical lymph glands, and mild fever. Two weeks later the cervical, submandibular, occipital and auxiliary glands were grossly enlarged about 1.5 cm each in diameter. Mantoux skin test was negative and chest x-ray was normal. An ELISA screening test for HIV-1 was positive and this was confirmed by Western Blot. His mother's screening test was negative and she was completely well. She had no risk factors for HIV infection. The child had never had a blood transfusion before.

Comments

Although without tracing the donor, there is no absolute proof, this case history strongly suggests that the blood transfusion in early October caused
a seroconverting illness 12 weeks later. This usually occurs about 3 weeks to 3 months after infection, but antibodies may rarely be absent until as long as 36 months after infection. Seroconversion presents as an influenza-like illness lasting 3–14 days. There may be fever, malaise, anorexia, myalgia, arthralgia, headache, sore throat, diarrhoea, macular rash and thrombocytopenia. There are usually enlarged lymph glands. It is unlikely that the patient acquired the disease perinatally since the mother was well and HIV antibody negative. If he had had previous transfusion it would have been likely that he had received an unscreened transfusion in the past and was now beginning to develop AIDS related complex (ARC), but the mother was definite that this was the first transfusion. We cannot exclude the possibility that he acquired the infection from an infected needle outside the hospital, although this is unlikely, since he was a regular attender at the sickle cell clinic.

Screening of blood for transfusion greatly reduces the chances of HIV transmission from an infected donor, but does not completely eliminate it, since blood may be donated during the donor's "window period". This is the period after acquisition of infection when there is viraemia but there are no antibodies that can be detected using the conventional screening techniques. It is, therefore, very important to reduce the numbers of blood transfusion given as much as possible and to limit the numbers of different donors for each patient. The risk of acquiring HIV infection from blood screened as negative is very small. It has been calculated as one per 100,000 units transfused but this value may vary from area to area. Apart from the small possibility of a false negative test, the numbers of donors in the "window period" at the time of donation depends on the stage of the epidemic in the area at the time so that if infection is spreading rapidly, more donors are at risk of infection. In addition to screening for antibodies it is useful to ask the potential donor questions pertinent to his or her social life, to try to exclude donors with risk behaviour. The questions asked may vary from country to country, depending on the main risk factors that have been identified.

In individual patients, unless the anaemia is life threatening, very often conservative management will raise the haemoglobin sufficiently. In bleeding patients the number of units transfused can be kept to a minimum with judicious use of dextran and isotonic fluids. Autologous transfusion is possible for example during bleeding from a ruptured ectopic pregnancy, or a patient due to have elective surgery can donate his own blood beforehand and then raising his haemoglobin by the use of haematinics.

Our patient had been very ill with severe anaemia and, therefore, the decision had been made to transfuse him, but doctors must be aware of the risk of HIV transmission and consider whether each unit of blood to be transfused is really necessary.

Reference


