

2 Risks of blood transfusion

Transfusion of blood or blood products involves the doctor in the evaluation of the risk/benefit ratio to the patient. All blood products carry a risk of adverse effects, ranging from sensitisation to donor cells or proteins, to transmission of disease, including HIV infection. The transfusion service endeavours to minimise major risks in the following manner:

1 HAEMOLYTIC TRANSFUSION REACTIONS

By crossmatch and compatibility testing and strict attention to details of patient name, number, and identification procedures at point of issue. The medical practitioner ordering blood should ensure strict specimen identification of patient name, hospital number, and folder and crossmatch protocol. See section on *"Ordering and Administration of blood"* (Section 5). Patients must be monitored at the start of the transfusion and every 15 minutes thereafter. Transfusions should be stopped immediately should there be any signs of untoward reaction. See *"Transfusion Reactions"* (Section 11).

2 TRANSMISSIBLE DISEASE AND DONOR SELECTION

a) Health screening

All donors are screened by means of a written questionnaire for evidence of any past or present infection that might be transmitted to the patient. This screening includes questions about behavioural patterns that may identify a risk of HIV and other infections. In addition the donor may be further questioned verbally prior to being selected for the donation process.

b) Testing

All donated units are screened for laboratory evidence of Syphilis, Hepatitis B and C, HIV 1 and 2. The tests used are internationally validated and are subject to stringent quality control.

The specific tests are those for Hepatitis B surface antigen, Hepatitis C antibody, HIV 1 and 2 antibodies, HIV p24 antigen, and Syphilis. All reactive units are removed from quarantine and incinerated. Further confirmatory tests are performed to confirm reactivity and the donors are subsequently notified and deferred. The inclusion of the p24 antigen test

for HIV infection potentially reduces the “window period” from 22 days to 14-16 days.

Note that in any particular individual, the immuno-silent “window period” may be considerably longer.

ONLY UNITS THAT ARE NEGATIVE FOR THE ABOVE MARKERS ARE ACCEPTED FOR TRANSFUSION OR FOR FURTHER PROCESSING.

Given the strict adherence to international standards of donor deferral and extremely sensitive test systems the risk of hidden infection is low, but recipients must be informed about the risk.

c) Look back programme

This programme was initiated in 1985 by the Blood Transfusion Services of South Africa to assess the incidence of transfusion-transmitted infection.

This programme traces any patient who received HIV and Hepatitis negative blood from a donor whose subsequent donation is found positive for either infection. Patients are contacted through the hospital or their private physician and are offered counselling and testing. Contacting the recipient is obligatory and may help prevent secondary spread to others through sexual contact. Ultimately the doctor who ordered the blood transfusion is responsible for counselling and testing the recipient and for managing and treating the patient, or for referring the patient to a specialist, where appropriate.

3 ADDITIONAL SAFETY MEASURES

Where the applicable technology exists, the blood product is further treated to inactivate any latent infection.

Currently the following products undergo viral inactivation procedures or include steps as part of the manufacturing process that have been documented in the literature as viral reduction steps: Albumin, Stabilised Serum, Factor VIII and IX concentrate complexes, intravenous immunoglobins and fresh dried plasma (FDP). While not all intramuscular immunoglobulin preparations undergo specific viral inactivation procedures, the manufacturing process is by cold ethanol fractionation which further reduces the risk of viral transmissions. Plasma products such as cryoprecipitate and fresh frozen plasma (FFP) carry a similar risk to cellular products; however, a virally inactivated lyophilised FDP (Bioplasma FDP) is produced by National Bioproducts Institute (NBI), while other Services are currently introducing a quarantined retested FFP to avoid window period infections.