

Transfusion of Blood and Blood Products in Clinical Practice

by Dr. Adele Visser

SANBS Guidelines 2014

Blood is considered to be a living tissue and therefore it is never fully possible to render it completely safe. For this reason, the transfusion of blood and blood products should never be undertaken unless succinctly indicated.

The risk of transmission of infectious agents, most notably the human immunodeficiency virus (HIV), Hepatitis B virus (HBV) and Hepatitis C virus (HCV), it should be noted that the South African National Blood Transfusion Service (SANBS) perform both serological and nucleic acid testing on each individual sample submitted for donation, as opposed to pooling strategies utilized in many other countries.

The clinician prescribing transfusion has certain responsibilities in this regard:

1. Owing to inherent risks, transfusion should only be undertaken if medically indicated.
2. A patient should be made aware of associated risks and potential harms.
3. Documented informed consent should be obtained.
4. Both the patient and the transfusion unit should be actively identified.
5. Compatibility testing is undertaken by SANBS.
6. Ensuring that the blood product has been correctly handled prior to transfusion.
7. Ensuring use within the expiry date.
8. Ensuring administration by a responsible person.

9. Ensuring transfusion at an appropriate rate.
10. Effectively anticipating and managing adverse reactions.
11. Retaining blood samples as required.
12. Reporting adverse effects or death.
13. Tracing, counselling and testing recipients part of blood transfusion haemovigilance programme.

Indications for transfusion

Red Cell Component	<p>Acute blood loss of >30% of blood volume.</p> <p>General surgery:</p> <p>Pre-operative Hb <8g/dL AND expected blood loss >500mL.</p> <p>Intra-/post-operative Hb <7g/dL (<i>may be higher if patient is at risk of myocardial ischaemia</i>) OR >60 years of age.</p> <p>Anaemia in Acute Coronary Syndromes to maintain the Hb between 8-10 g/dL.</p> <p>Obstetric haemorrhage should maintain Hb between 6-10 g/dL during resuscitation phase.</p> <p>Symptomatic anaemia (<i>which will have varying Hb levels, depending on chronicity and underlying causes</i>).</p>
Washed Red Cells	<p>Severe, recurrent, allergic transfusion reactions not prevented by antihistamines.</p> <p>Known IgA deficiency with anti-IgA antibodies.</p> <p>Paroxysmal nocturnal haemoglobinuria (PNH).</p> <p>Neonates with T-activated red cells.</p> <p>Following gamma irradiation with storage for >12 hours.</p>
Whole blood	<p>Exchange transfusions in neonates.</p> <p>Massive haemorrhage.</p>



Gamma irradiated Blood products	<p>All transfusions from blood relative. All HLA matched platelet concentrates. Intra-uterine transfusions (IUT). Exchange transfusion following IUT. Recommended in all exchange transfusions provided it does not delay procedure. Congenital immunodeficiency states. All recipients of allogeneic bone marrow transplant (BMT) or peripheral blood stem cell transplants from conditioning chemo- / radiotherapy. All patients undergoing stem cell harvesting. All patients with Hodgkins Disease. Patients treated with purine analogue drugs.</p>
Platelet transfusions	<p>All stable adult patients with counts $<10 \times 10^9/L$. Patients with increased bleeding risk with levels $<20 \times 10^9/L$. Anatomic lesions like peptic ulcers. Fever or sepsis. Recent severe haemorrhage from mucus membranes. Anticoagulant therapy. Using drugs affecting platelet function. Severe anaemia. Undergoing surgical procedures with counts $<50 \times 10^9/L$. Undergoing CNS or ocular surgery with counts $<100 \times 10^9/L$. Part of massive transfusion regimens to maintain count $>50 \times 10^9/L$. Cardiopulmonary bypass if microvascular haemorrhage occurs with counts $<100 \times 10^9/L$.</p>
Fresh Frozen Plasma	<p>Replacement of inherited single factor deficiency (<i>if single factor is not available</i>). Multiple coagulation factor deficiencies (<i>part of DIC, massive blood transfusion or liver disease</i>). Reversal of Warfarin if actively bleeding. Vitamin K deficiency associated with active bleeding. Thrombotic Thrombocytopenic Purpura (TTP). Scoline apnoea. Haemorrhagic disease of the newborn.</p>

References

1. Clinical Guidelines for the use of Blood Products in South Africa 6th Edition (2014)

JDJ Pathology Laboratories

Suite LG 2, Musgrave Park,
18 Musgrave Road
Durban, 4001

☎ 031 201 4647
📞 067 826 7473
📠 031 201 4910

✉ clientservices@jdjd.co.za
✉ accounts@jdjd.co.za
🌐 www.jdjd.co.za

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