SPECIALISED THERAPEUTIC SERVICES

THERAPEUTIC SERVICES FOR SOUTH AFRICA

This document provides information on the use of therapeutic apheresis services for patients suffering from a variety of conditions. It gives information on specialised clinical apheresis services provided by the South African National Blood Service (SANBS) and how to refer your patient for treatment

OVERVIEW

SANBS Specialised Therapeutic Services (STS) provides life-saving clinical apheresis services for a range of clinical specialties including haematology, neurology, oncology, and nephrology, to adult and paediatric patients in private and public hospitals across South Africa. Our team comprises more than 25 staff which includes therapeutic nursing specialists, a quality team, administrative staff, and specialist doctors. Patients are treated by our internationally certified therapeutic specialists, at the hospital bedside. SANBS services in excess of 2000 therapeutic plasma exchange patients annually.

What does therapeutic apheresis involve?

Apheresis is a procedure in which whole blood is removed from a patient and separated out into the different blood components via centrifugation. The blood component of interest is removed, and the rest of the blood is returned to the patient. The services are performed by highly trained staff using apheresis technology. There are over 80 different diagnostic indications and most patients are critical care patients.

In SA the most common clinical indication for clinical apheresis is plasma exchange for Thrombotic Thrombocytopenic Purpura.

AMERICAN SOCIETY FOR APHERESIS (ASFA) GUIDELINES

The American Society for Apheresis (ASFA) publishes evidence-based guidelines for the use TPE which are updated every three years (the 8th edition is available at: https://www.ammtac.org/docs/articulos/ASFA%202019%20guidelines.pdf).
These guidelines provide recommendations on the level of evidence, frequency and number of treatments and replacement fluids to be used for each condition.

We offer:

- A flexible and responsive service 365 days per year to both public and private patients (during business hours)
- Experienced medical, technical and logistic teams
- A robust quality management system
- A comprehensive range of therapies
  - plasma exchange
  - plasmapheresis
  - leukapheresis
  - thrombocytapheresis
  - granulocyte collection
  - lymphocyte collection
  - peripheral blood stem cell collection
  - red cell exchange
  - immunoadsorption

Which diagnoses are supported with plasma exchange?

Neurology

- acute inflammatory demyelinating polyradiculopathy/ Guillain-Barre syndrome (GBS)
- chronic inflammatory demyelinating polyradiculopathy (CIDP)
- paraprotein polyneuropathy with Ig A/Ig G or Ig M
- myasthenia gravis

Haematology and oncology

- thrombotic thrombocytopenic purpura (TTP)
- sickle cell disease including acute stroke management
- thrombotic microangiopathy
- atypical haemolytic uraemic syndrome
- hyperviscosity in monoclonal gammopathies
- cryoglobulinaemia
- mycosis fungoides/cutaneous T cell lymphoma/Sezary syndrome
- hyperleukocytosis
- hereditary hemochromatosis

Nephrology

- ANCA-associated rapidly progressive glomerulonephritis
- anti-glomerular basement membrane disease
- recurrent FSGS after transplant
- renal transplant rejection, ABO compatible renal transplantation
- ABO compatible desensitisation, living donor

sanbs.org.za
Toll free: 0800 11 90 31

STEM CELL SERVICES

SANBS STS provides a range of services to transplant facilities across South Africa and neighbouring countries. Patient and donor selection is performed by the transplant facility. SANBS can provide donor suitability assessments by a qualified physician or this can be performed by the transplant facility. Donor eligibility is determined using the following parameters: donor can give informed consent (adequate age of donor, absence of coercion, appropriate counseling given, adequate understanding), physiological and mental fitness, and appropriate biochemistry results. Once selection and assessment are completed, the harvest can be booked and mobilisation of the donor can begin.

On the day of collection, the donor is reassessed and if in good health then venous access is obtained. Good venous access is essential for all apheresis procedures to ensure continuous blood flow to and from the cell separator machine. Peripheral vein access may be used where appropriate, however, when peripheral veins cannot support the required blood flow rates (especially when multiple procedures are necessary), central venous access will be required. Our staff is available to perform a vein assessment and guide you on the appropriate venous access for your patient. If required, a SANBS doctor is available for CVC placement.
If there are complications in the procedure there must be adequate emergency services available. On completion of the collection, the stem cell product is transported for testing, processing, and storage at SANBS' Cellular Therapy Lab (CTL).

THERAPEUTIC PLASMA EXCHANGE

During a TPE procedure whole blood is removed from the patient. The plasma is separated from the rest of the blood using a cell separator machine and the red cells, white cells, and platelets are returned to the patient. In this way, any disease-causing substances in the plasma are removed. A plasma replacement fluid is given to the patient too, to compensate for the plasma that has been removed. Citrate, an anticoagulant, is added to the extracorporeal circulation to prevent clotting.

The fluid used to replace the removed plasma is usually human albumin for neurological conditions and fresh frozen plasma (FFPs) for oncological conditions. TPE removes coagulation factors with the plasma, therefore when albumin is used as a replacement fluid, monitoring of coagulation factors is required. American Society for Apheresis (ASFA) guidelines recommend INR, PTT, and fibrinogen testing before the first TPE procedure and on alternate days thereafter. When coagulation abnormalities are present, FFP, cryo-poor plasma, and/or cryoprecipitate may be added to the albumin replacement.

RED CELL EXCHANGE

In a red cell exchange, whole blood is removed from the patient and separated into its different components based on size, red cells being the heaviest. Abnormal red cells are removed and replaced with donated packed red cells that have been tested to match the recipients' red cell antibodies, ABO, and Rh groups. The units are also HbS negative, leukocyte reduced, and antigen-matched (e.g., C/c, E/e, K). SANBS utilises its vast network to source appropriate blood products and delivers the service at the hospital bedside.

LEUKAPHERESIS FOR CLINICAL TRIALS

SANBS STS offers leukapheresis services for clinical trials in South Africa. We work hand in hand with the clinical trial facility to ensure the safe and adequate collection of peripheral blood mononuclear cells.

GRANULOCYTE COLLECTION

Granulocyte collections are performed to treat neutropenic sepsis. In a procedure similar to stem cell harvesting, apheresis is performed using a cell separator on a healthy donor. Donor selection entails a series of laboratory and clinical tests. The specimen is transported for irradiation and delivered to the recipients' bedside within 24 hours of collection.

How to refer patients for Therapeutic Plasma Exchange treatment

If you wish to refer a patient for Plasma Exchange please contact us on 082-555-9294. We aim to perform the first procedure within 20 hours from the first call unless requested otherwise by the treating doctor.

At SANBS, it is our mission to reliably provide trusted blood products and services to all patients at a world-class level of cost and quality. We look forward to assisting you with all your clinical apheresis requirements. Please contact us for any queries, referrals, or general information.

We can be reached on Call Phone:082 555 9294
Email: therapeutics2@sanbs.org.za for any queries or to make a booking for therapeutic apheresis procedures.