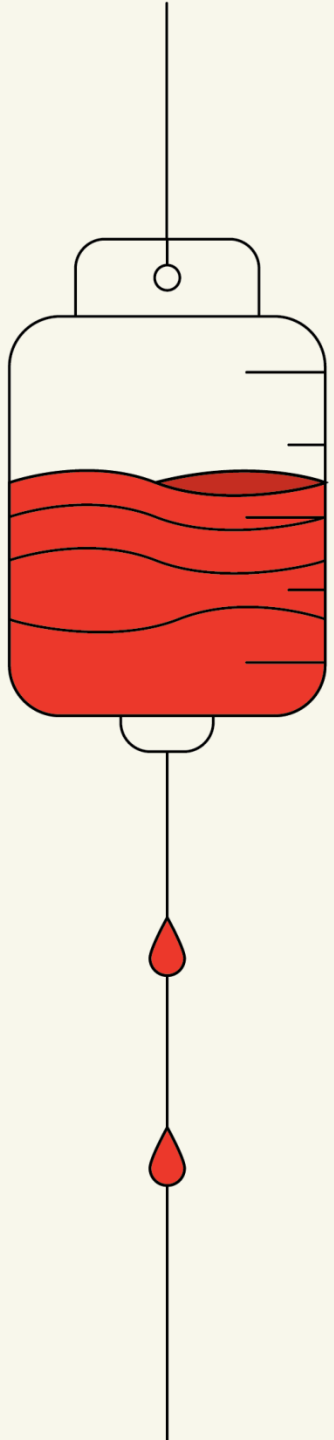


Collection efficiency of CD34 haematopoietic progenitor stem cells in clinical apheresis collections

Presenter:

Nonceba Raphalalani
Therapeutic Supervisor

Co-Authors
Thabo Gcayiya
STS Manager

Laurel Anderson

JACIE Quality Manager

SANBS

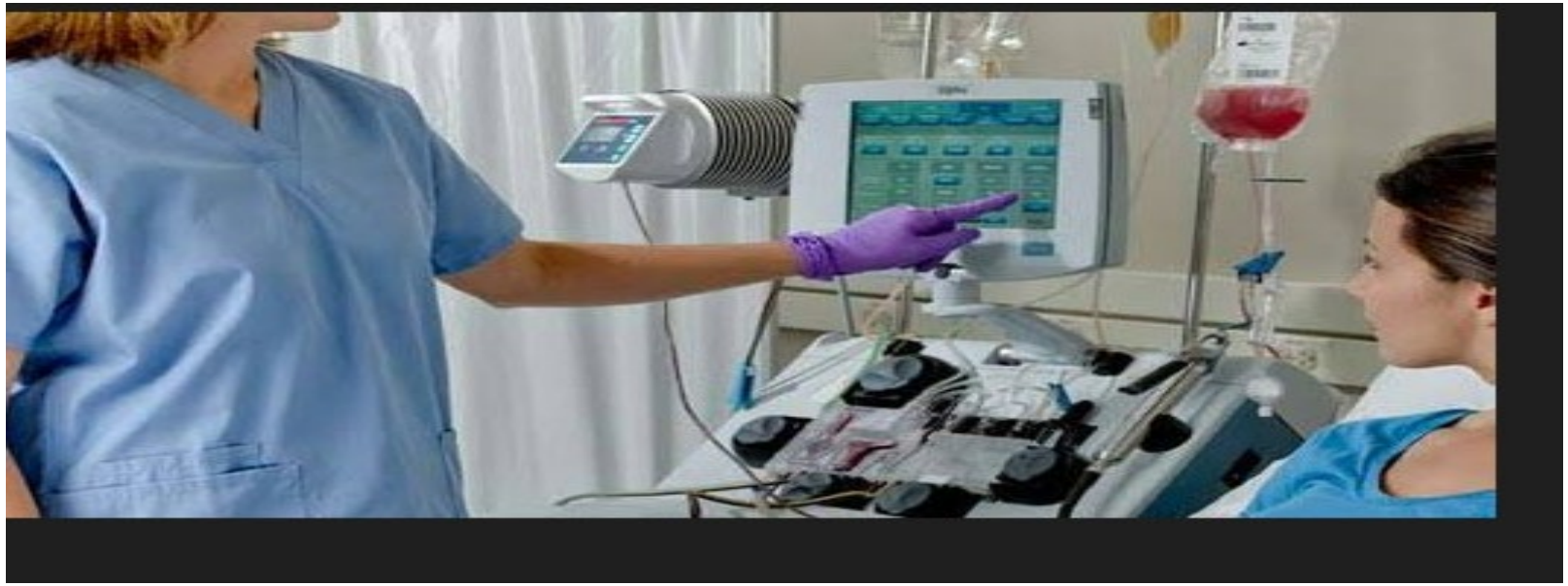
Background:

- Clinical apheresis procedures are used for a variety of disease management protocols provided by the SANBS as a mobile clinical apheresis service to maximize coverage in 8 of the 9 provinces of South Africa, servicing 78 clinical facilities in the private and public sectors.

- There are two types of donors for haematopoietic progenitor stem cells collections (HPSC) recipient.

Aims

- The aim of this retrospective study was to investigate the procedural factors in low CE (<35%) for HPSC collected via Optia apheresis platform (a continuous flow centrifugation platform).



Methods:

- A period from 1 August 2021 to 30 November 2021 was selected.
- Patients undergoing HPSC collection are usually diagnosed with:
  - Hodgkin's Lymphoma (HL), Multiple Myeloma (MM) and Testis Cancer (CA Testis) – referred to as auto donors.
- Donors undergoing HPSC collection are usually for the treatment of patients diagnosed with
  - Acute Lymphoid Leukemia (ALL), T-Cell Lymphoma (TCell), Acute Myeloid Leukemia (AML) Mast Cell Leukemia (MCL), Diffuse Large B-Cell Lymphoma (DLBCL), and Lymph histiocytosis – referred to as allo donors.
- The auto and allo adult donors for the time period was determined and the donors with a low CE identified.
- The CE is calculated as:

$$CE^2 = \frac{\text{Cells in Product Bag}}{\text{Pre PB Conc x (Blood Volume Processed)}} \times 100$$

Results:

- During this four-month period, a total of 99 procedures were performed, of these 7 (7%) was allo and 92 (93%) auto.
- A total of 26 (15 auto and 11 allo) adult patients (some patients underwent more than one procedure) and donors related to the diseases of interest, were identified.
- The total number of donors with a low CE was seven (five auto and two allo).
- All the pre-CD34 counts were within the recommended range (≥ 20 cells/µl). Five low CE auto collections were linked to MM; While 2 allo donors linked with DLBCL and Lymph histiocytosis had a yield > 2.
- Investigation into the mobilization strategies for the MM donors showed that 1 donor had Chemo-GCSF mobilization and 4 had GCSF; indicating that there are no link between mobilization strategy and CE yield.

SANBS

Conclusion:

- The overall CE of the SANBS mobile clinical apheresis service is exceptional.
- A total of 99 procedures only seven donors had a low CE.
- This indicates that the procedure and service that the SANBS Team provides is of good quality.

Acknowledgement

- Clinical Physicians
- Patients
- STS Manager
- JQD
- SANBS STS Team

THANK YOU