PRE-DONATION TRANSFUSION TRANSMITTED INFECTION SCREENING IN SINGLE DONOR APHERESIS PLATELET (SDP) DONOR: PREVALENCE AND PSYCHO-SOCIAL ISSUES

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BACKGROUND AND OBJECTIVES

Pre-donation Transfusion Transmitted Infection (TTI) screening (PDS) is vital in Transfusion medicine, particularly in high endemic areas, to improve blood transfusion safety and cost-effectiveness. While PDS is commonly performed in whole blood donation settings in other parts of the world, it is regularly conducted before single donor platelet (SDP) collections in India either by chemiluminescence or other serological methods.

The **prevalence of TTIs in SDP donors** using chemiluminescence-based screening remains unreported, and so does the **psychological impact on donors** with reactive results.

The study aims to determine the **prevalence of TTIs in SDP donors** using **chemiluminescence**.

METHODS

A retrospective study was conducted to **trace the PDS results of SDP donors** over **five years** in the **Department of Transfusion Medicine at AIIMS Bhubaneswar.**

- When a platelet transfusion is indicated, the patient's representative have to bring a donor to the department.
- The donor completes a pre-donation questionnaire, undergoes a physical examination, and is assessed for vein suitability.
- Blood grouping and a complete blood count (CBC) for platelet count and haemoglobin levels are performed.
- If the donor meets all eligibility criteria, **PDS is performed** using **chemiluminescence-based serology**.
- If results are non-reactive, platelet collection through apheresis is carried out, and donors are counselled and referred if reactive.
- The **prevalence percentage** was calculated by **dividing the total number of reactive by the total number of PDS multiplied by 100**

RESULTS

A total of 944 **prospective donors** were **screened for TTIs**. Among these donors:

- All were male except for one female.
- Platelet donations **increased from 36 in 2020 to 406 by October 2024**. Three individuals tested reactive for TTIs during PDS:
- Reactive results: Two for HBsAg, one for HCV, one for syphilis resulting in a **prevalence rate of 0.42%**.
- **HCV** and **HBsAg reactive donors** were referred to the **Gastroenterology OPD**, and the **Syphilis reactive donor** was referred to the **Venereology and Dermatology OPD**

CONCLUSION

- **Prevalence of TTI in PDS is 0.42 %**, which is very low compared to post-donation screening of whole blood donors.
- PDS in SDP donation offers economic benefits by preventing product discard.
- Challenges associated with PDS include:
  - Regulatory compliance issues.
  - Extended donor waiting times.
  - Psychological impacts on donors due to complexities in result disclosure.
  - Delayed platelet transfusions for patients.
- Highly sensitive testing methods increase the risk of false positives.
- **Recommendations**:
  - ✓ Implement voluntary SDP collection.
  - ✓ Smaller centres should maintain group-wise stock reserves and ensure proper inventory management.

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