

## TRANSFUSION MEDICINE

<b>Observational design (descriptive):</b>	
1.	Quality assessment of extended storage of platelets at 4°C as compared to room temperature stored platelets, in-vitro study.
2.	Quality and safety assessment of platelet concentrates prepared by platelet rich plasma-platelet concentrate, buffy coat poor-platelet concentrate (BC-PC) and apheresis- platelet concentrate methods.
3.	Setting up the benchmark for the quality indicators in transfusion medicine.
4.	What is the seroprevalence of Hepatitis E/dengue virus infection (transfusion transmitted infections) in blood donor population?
5.	Does blood-borne pathogen detection methods influence infectious complication rates / patient survival?
6.	Does adopting pathogen reduction technology influence infectious complication rates / patient survival?
7.	Reverse algorithm for Syphilis screen and the importance in current scenario.
8.	Prevalence of antenatal anemia and blood transfusion requirement in pregnant females.
9.	Prospective audit of use of packed red blood cells in transfusion decisions among patients with anemia admitted to Intensive Care Unit.
10.	Study of red cell alloimmunization prevalence in various patient population groups (hemato-oncology patients /thalassemia patients).
11.	Determination of Human Leucocyte antigen (HLA) alloimmunization in multi-transfused Intensive Care Unit (ICU) patients.

12.	Role of Acute normovolemic Hemodilution (ANVH) in reducing allogenic blood transfusions in a cohort of Coronary artery bypass graft CABG cardiac surgeries.
13.	Predicting the need for massive transfusion in patients undergoing elective cardiac surgery based on pre-operative global hemostatic assay.
14.	Hemostatic effects of cryoprecipitate versus various pharmacological derivatives (ex. fibrinogen derivatives) in adult cardiac surgery patients or obstetric patients.
15.	Impact of Preoperative anemia correction in Transfusion requirement of total knee replacement (TKR) and total hip replacement (THR) surgeries.
16.	Studying effect of blood donation on iron storage in regular blood donors.
17.	Prediction of rate of donor reactions based on pre-donation physical and psychological manifestations in blood donors /plateletpheresis donors.
18.	Prevalence of minor blood group phenotypes (Kell, Lewis, Duffy) in various regions in India.
19.	RhD Genotyping / molecular characterization to detect RhD variants in Rh D negative donors.
20.	Assessing utility of visco-elastic test guided transfusion support in obstetric haemorrhage for rationale use of blood / clinical outcomes.
21.	Utility of Thromboelastography (TEG) in assessment of sepsis induced coagulopathy in critically-ill patients.
22	Prevalence and characterisation of platelet refractoriness among various patient groups (ex. paediatric oncology patients/ Hemato-malignant patients).
23	Comparative evaluation of two-cell panel with the standard three –cell panel in detection of unexpected red cell antibodies.
24	Assessing maternal antibody characteristics affecting severity of Rh in Haemolytic Disease of the fetus and Newborn.
25	Utility of platelet cross-matching in the management of platelet refractoriness.
26	Scope/Gap analysis of patient Blood management in various patient groups (Cardio Thorasic Vascular Surgery/Orthopaedics / Obstetrics).
27	Assessment of the knowledge, attitude, and practices about blood donation among blood donors.
28	Pre- and post-assessment of training programme of rational usage of blood components in a tertiary care hospital.

29	Pattern of blood and blood Component Utilization in a tertiary care Hospital.
30	Evaluating blood transfusion practices (Red blood cells, Platelets and Fresh frozen plasma) in a variety of clinical settings.
31	Evaluation of cold chain maintenance in blood product transport.
32	Frequency of bacterial contamination rates in transfusion recipients.

### Experimental design:

1	Effect of double leuco-reduction compared to irradiation of cellular blood components on in vitro T cell proliferation potential.
2	Randomized Controlled Trial comparing Buffy coat pooled platelets with apheresis platelets in different clinical conditions (Hemato-oncology, dengue, Cardio Thorasic Vascular Surgery and trauma).
3	Modification of blood components (ex. saline wash/ leucoreduction) and evaluating their effects on clinical outcomes of select patient groups (ex. Disseminated Intravascular Coagulation).
4	Comparison of Low Titre O-Positive Whole Blood Transfusion Vs. component therapy in trauma patients to evaluate use of red Cells, fresh frozen plasma, platelets and cryoprecipitate requirements in first 24 hours in each group along with 24hours mortality and Intensive Care Unit outcome in each group.
5	Randomized Controlled Trial comparing room temperature stored platelets with cold stored platelets in bleeding patients (Cardio Thorasic Vascular Surgery /Trauma).
6	Efficacy of Therapeutic Plasma Exchange in Acute Liver Failure patients due to Yellow phosphorus Poisoning.

7	Study of Platelet Transfusion practices and Factors affecting efficacy of Platelet Transfusion in neonates and formulation of Maximum Surgical Blood Order Schedule (MSBOS).
8	Comparison of transfusion outcome in Low dose platelet Versus standard dose in bleeding thrombocytopenic patients.
9	Effect of Change in screening policies on donor deferral and demographics.
10	What are the various interventions that can be adopted to reduce donor reactions?
11	Comparison of safety and efficacy of transfusion support using monocyte monolayer assay Vs. conventional least incompatible blood transfusion to predict haemolytic potential of red cell antibodies in warm autoimmune haemolytic anaemia.
12	Implementation of Type and screen policy Versus conventional cross-match in elective surgical patients.
13	Gap analysis and assessing effectiveness of training programme on Patient Blood Management among Medical Faculty.

**Observational design (analytical):**

1.	Comparison of different screening tests Enzyme Linked Immunosorbent assay(ELISA), Chemiluminescence & Nucleic acid testing for Hepatitis-B, Hepatitis-C, and Human Immunodeficiency Virus among healthy blood donors for identification of true positives and impact on blood discard rates: Cost benefit analysis.
2	Study to assess the effect of donor/procedural variables on the quality of prepared blood components.
3	Estimating the voluntary blood donor return rate and determine its associated factors.
4	Estimating the incidence of adverse transfusion reactions and the causal factors – An active surveillance approach.
5	Prevalence of alloantibody prevalence in pregnant woman and its impact on fetus.
6	Evaluation of Anti-A and Anti-B IgM and IgG antibodies Titre in O group Blood Donors and associated Factors.

7	Evaluation of various techniques for antibody titration using conventional tube technique, column agglutination technique and Automated immunohematology analyzer in ABO blood group incompatible renal transplant.
8	Effect of donor variables on transfusion outcome in various recipient groups.