



Indian Journal of Pathology and Oncology

ISSN 2394-6784(Print)
e-ISSN 2394-6792(Online)

IJPO

TRANSFUSION MEDICINE - A BRANCH OF PATHOLOGY OR A SPECIALITY ON ITS OWN?

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For anything that we wish to know about, Master 'Google' is the answer. Then why did I feel the need to write this article? It is because, about a week ago, I got a phone call from one of my juniors asking me "What does Transfusion Medicine deal with?" He actually had to choose a seat for his post-graduation and seeing Transfusion Medicine as one of the available options, had this question in mind. He was not sure about the subject and its future prospects. It then occurred to me that there might be many such fresh medical graduates whose queries regarding Transfusion Medicine may not have been satisfactorily answered by Google. And then, there is also a small bunch of medicos who claim to know about this subject, often confuse it with 'Blood Banking'. I felt, this would be the best platform to make our fraternity aware regarding this evolving subject.

What does Transfusion Medicine deal with?

Transfusion medicine in its current form is a new discipline of medicine quite different from blood banking. Blood banking, in yester years, dealt only with blood donor selection, blood collection, testing of blood and supplying blood units to the clinicians as per their demands and this was usually done by trained technicians and supervised by pathologists. It usually only found a gloomy place under the Department of Pathology and naturally came at the bottom of the priority list of pathologists whose

primary foci were histopathology, cytopathology and haematology.

The scenario and concept of blood banking has undergone a revolutionary change. Today, blood bankers are not content with playing the supportive role to physicians and surgeons. The concept of blood bank as a 'service providing department' does not hold good anymore. Across the world, blood centres are moving away from being mere store houses of blood. Blood banking has forayed into the area of therapeutics (also known as Clinical Haemotherapy) and therefore, has rightly been rechristened as 'Transfusion Medicine'.

Transfusion medicine, besides providing the basic blood banking facilities as mentioned above, also deals with:

- Solving immune-haematological discrepancies between donors and patients
- Component preparation and administration
- Apheresis
- Irradiation of blood products
- Peripheral blood stem cell (PBSC) extraction, storage and transplantation

And.....what does a Transfusion Medicine Consultant/Transfusion Physician do?
From womb to tomb, we all require blood. Requirement of blood usually comes from

the treating doctors or the clinical consultants. Practitioners of transfusion medicine are basically consultants to the clinicians regarding planning of transfusion therapy. The basic job responsibilities of a Transfusion Physician are:

1. Component therapy: Earlier any requirement of blood would mean "Whole Blood". But, in this era of component therapy, (where whole blood has lost its old glory!!) it is for the Transfusion specialist to decide, in conjunction with the clinician, as to which component should be transfused and at what dose. A rational component therapy means the *right component* for the *right indication* at the *right dose* and at the *right time*. Promotion and practice of rational use of blood by bringing in behavioural changes in physician practices is a vital responsibility of the Transfusion Specialist.
2. Transfusion in special clinical situations: There are many special clinical situations, where transfusion should ideally be planned and administered in consultation with the Transfusion specialist. These are viz. transfusions in paediatric patients and neonates, in bone marrow and solid organ transplant cases, in massive transfusions etc. These are areas where standard protocols prepared by the Transfusion Medicine Department needs to be followed for an effective transfusion regime.
3. Apheresis: Technological improvements in the field of apheresis have catapulted blood bank officers into therapeutics. Apheresis is a procedure where blood is withdrawn from a donor, separated into components, one (or more) of the components is retained and the remaining constituents are recombined and returned to the donor. This principle has been applied to remove pathogenic substances viz. antibodies, paraproteins, certain poisons etc. from the plasma of the patient and resending the 'purified' plasma back

to the patient. This is called therapeutic plasma exchange or plasmapheresis and has been helpful in various hyperviscosity syndromes.

4. Immuno-haematology: This is another domain where a Transfusion Medicine specialist has to put his brain (or should I say 'nose') into. Solving blood group discrepancies, detection of unexpected antibodies in patients and selecting a compatible (antigen negative) blood unit for patients with corresponding antibody, choosing a compatible unit of blood for patients with autoimmune haemolytic anemia are few among the many immuno-haematological work-ups done by the Transfusion Medicine team.
5. Management of transfusion reactions: A Transfusion Specialist is also actively involved in identification and proper management of adverse reactions which occur following blood and component transfusion. He has to keep track of all the transfusion reactions which occur in the hospital, determine its nature, categorise it based on standard guidelines and plan management accordingly. This constitutes a part of an ongoing worldwide program called "Haemovigilance".
6. Administration and management: Last but not the least, he has to look into and supervise the administrative and managerial aspects of blood banking.

Therefore, a Transfusion Physician should not only possess the qualities of a skilled laboratorian but also has to be a good administrator and should have a clinical bent of mind as well. Today, Transfusion Medicine is no longer looked down upon as a fragile branch of Pathology. It has emerged as a speciality on its own and only physicians trained in this field can run the show.

Transfusion Medicine may be seen as a product of marriage between an old man (Blood Banking) and a young lady (Clinical Haemotherapy). Although, the so called

'product' has brought tremendous changes in the field of medicine, this should not however be a source of inspiration to old men!! Jokes apart, this branch of Transfusion Medicine is the newest branch in the field of medicine and has already made great advances in its short journey till date. We have about 2700 blood banks in India and the number increases by more than 30 per year approximately due to new medical colleges, corporate hospitals etc. But to man these blood banks, there are only a few handful of Transfusion Medicine specialists.

Deciding what career path we wish to follow is a difficult process. In medical schools, students often find that they are on the "fast track" of decision making. We have to decide on a speciality area to pursue, often with little knowledge of the many possibilities. This can be a great career option for the medical graduates. This branch, with only few specialists all over India, is not only lucrative but also virgin in terms of research opportunities. The soil is still soft and fertile, so why wait??? Just, hit it!!