



रक्तमा



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HAPPY NEW YEAR!

2012

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Lets welcome this New Year with a resolution of "Safe Blood Starts with me"

Is leucodepletion of blood / blood components for transfusion is need of hour today ?

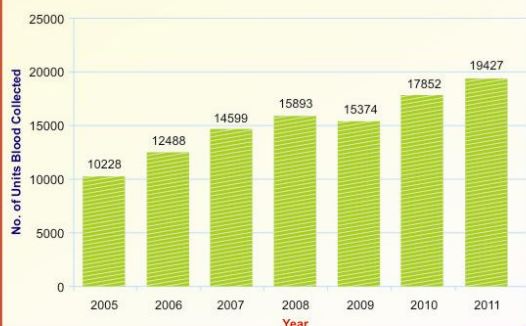
Leucodepletion is a process by which leucocytes are removed from donated blood. This has been gaining importance because of scientific evidence that the blood components which are reduced prior to transfusion prevent or reduce the incidence and number of adverse transfusion effects. It has been estimated that the average content of leucocytes in donated human whole blood is 2 to 3 $\times 10^9$ leucocytes per 450ml.

Benefits of leucodepletion : Potential benefits of leucodepletion for patients include :

- ❖ Reduction in febrile non – haemolytic transfusion reactions
- ❖ Reduction in transfusion associated grafts vs host disease risks
- ❖ Reduction in platelet refractoriness, CMV transmission risk etc.

Soon our centre KBBS is also starting leucodepletion technique for leucoreduction which would not only benefit multiple transfusion patients like thalassemia, cancer patients but will also improve the transfusion outcome in other major surgeries like cardiac surgery, multiple organ failure, besides the overall patient comfort during the transfusion. It has been seen that the time taken for the blood transfusion has reduced considerably from 4-5 hrs to just 2 hour per transfusion. Thus the use of integral blood collection bags with filters has improved the blood safety, hence keeping in mind of these benefits requires universal shift towards the use of leucodepleted blood components.

Total No. of Blood Collected during the Period 2005 to 2011



Differential Diagnosis and Management of Thalassemias

The diagnosis of thalassemia major is readily made during childhood on the basis of severe anemia accompanied by the characteristic signs of massive ineffective erythropoiesis : hepatosplenomegaly, profound microcytosis, a characteristic blood smear and elevated levels of HbF, HbA2, or both.

Differential Diagnosis : Other than Thalassemia, only three conditions need to be considered in the differential diagnosis of a hypochromic microcytic anemia. The first is an iron deficiency anaemia which can be differentiated from Thalassemias most readily by serum iron values; normal or increased serum iron levels and transferrin saturation are characteristic of the thalassemias.

Diagnosis of Microcytic Anemia

Tests	Iron Deficiency	Inflammation	Thalassemia	Sideroblastic Anemia
Smear	Micro/hypo	Normal micro/hypo	Micro/hypo with targeting	Variable
SI (µg/dl)	<30	<50	Normal to high	Normal to high
TIBC (µg/dl)	>360	<300	Normal	Normal
Percent saturation (%)	<10	10–20	30–80	30–80
Ferritin (µg/dl)	<15	30–200	50–300	50–300
Hemoglobin pattern	Normal	Normal	Abnormal	Normal

Note: SI, serum iron; TIBC, total iron-binding capacity.

Management : Under conditions of ideal chelation it is expected that serum ferritin levels be maintained within normal limits irrespective of the total no. of transfusion therapy. Setting the cut off limit for S.ferritin <1000ng/ml between adequately chelated and poorly chelated patients. The Optimal age for initiating iron chelation therapy in patients with severe thalassemia remains uncertain, although it should begin as early as possible to prevent growth and developmental defects. Thus when serum ferritin levels reach approx. 1000ng/ml, which is usually after the first 10 to 20 transfusion or around 2-3 years of age. Three approved iron chelation agents are available currently – deferasirox, deferoxamine, and deferiprone. The

Donation of blood means a few minutes to you but a life time for somebody else.



agents used most commonly is oral deferiprone (kelfer) and its side effects are joint pain, leucopenia and GI intolerance (nausea, vomiting). Desferrioxamine (Desferal) is to be administered subcutaneously and hence is inconvenient for the patients and it is used only when patient is sensitive to deferiprone or deferiprone alone is ineffective. Desferasirox (Asunra) is a newer agent. It is also given orally but is expensive.

This evitable consequence of regular life – saving transfusion in thalassemia major is the accumulation of excess iron within tissues. It causes progressive organ damage and dysfunction which, without treatment can lead to an increase in morbidity and mortality. Thus for patients requiring regular blood transfusions, iron chelation may represent life – saving therapy.

New Advances in transfusion Medicine : A Step Towards Safer Blood Transfusion

Screening of blood donations for viral markers such as Hepatitis B, Hepatitis C and HIV remains an essential practice prior to blood transfusion globally. First line screening of serological markers HBsAg, antiHCV and antiHIV 1&2 had been replaced from 3rd generation to 4th generation to increase the sensitivity and specificity of test but still there remains a potential threat of missing these infections during the window period, which is between the onset of infection and emergence of the first detectable serological marker for the infection in blood.

Viral Nucleic Acid Testing (NAT) of blood donor samples helps in detecting occult infections and by shortening the window period, can prevent TTI's.

Gamma Irradiation of blood components : Patients with congenital or acquired immunodeficiency are at risk of development of TAGVHD (transfusion associated graft verses host disease), a fatal condition caused by donor lymphocytes. This condition can be prevented by irradiation of blood components prior to transfusion.

Automation in blood banking test : Enhanced safety in transfusion services operation means reducing errors or the potential for errors. Test standardization and process controls through automation can help decrease that potential for error. Automated devices have been developed for the detection of antigen antibody reactions, blood grouping & cross matching technique, gel technology, automatic ELISA screening and identification of antibodies.

Thus these newer techniques would help in achieving our goals of increasing workload capacity, and improving precision and accuracy and reducing the no of labour incentives, thus found significant decrease in turnaround time of reports.

Indications of Platelet Transfusions

Prophylactic

- ❖ Platelet count $< 10 \times 10^9/l$ without additional risk factors
- ❖ Platelet count $< 20 \times 10^9/l$ with additional risk factors (fever, sepsis, concurrent use of antibiotic, on chemo/radio therapy or other abnormalities of haemostasis)
- ❖ Platelet count $< 50 \times 10^9/l$ if patient is undergoing minor invasive procedure, epidural anesthesia, gastroscopy and biopsy, insertion of indwelling lines, transbronchial biopsy, liver biopsy)
- ❖ Platelets count $< 100 \times 10^9/l$ if patient undergoing major surgical procedures .
- ❖ Platelet count $< 100 \times 10^9/l$ in patient with massive transfusion.

Therapeutic

In patients with bleeds from oral cavity, mucous membranes or from any other sites with platelet dysfunction irrespective of their platelet count.



In Lighter Vein



- 🗣️ A little girl came home from school and said to her mother, "Mommy, today in school I was punished for something that I didn't do." The mother exclaimed, "But that's terrible! I'm going to have a talk with your teacher about this... by the way, what was it that you didn't do?" The little girl replied, "My homework."
- 🗣️ The teacher came up with a good problem. "Suppose," she asked the second-graders, "there were a dozen sheep and six of them jumped over a fence. How many would be left?" "None," answered little Norman. "None? Norman, you don't know your arithmetic." "Teacher, you don't know your sheep. When one goes, they all go!"

Give mankind the greatest gift donate blood when blood bank comes to your place.



Activities

Valuntary Blood Donors Felicitation Oct. 2011



स्वैच्छिक रक्तदान की झलकियाँ

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Share the happiness of glory, give the gift of blood, the gift of life.