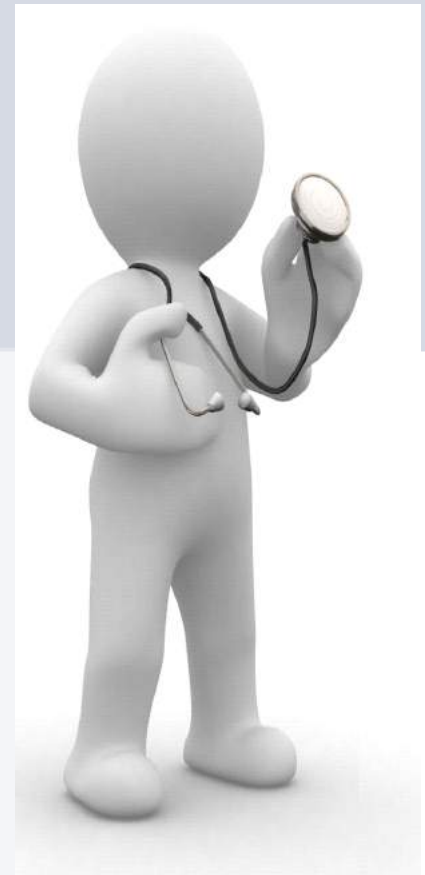


PLATELET TRANSFUSION IN CASES OF DENGUE FEVER

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**DEPARTMENT OF TRANFUSION
MEDICINE**



INDICATIONS FOR PLATELET TRANSFUSION

■ Thrombocytopenia

- <10,000/cu.mm in uncomplicated patients
- <20,000/cu.mm if febrile or septic eg: Dengue Fever
- <50,000/cu.mm if bleeding/undergoing major surgery.
- <100,000/cu.mm for neurosurgery /ophthalmologic procedures

■ Thrombocytopathy

- Congenital defects.
- Drugs etc.

- Platelets can be transfused either by

SINGLE DONOR PLATELETS

or

RANDOM DONOR PLATELET

PLATELETS

■ Single donor platelets

- Also referred to as “Jumbo platelets”
- 250 ml
- Expected increment of 30,000- 50,000/ μ l/dose (unit)

■ Advantages:

- Less infectious risk
- Less risk of HLA alloimmunization



■ Random donor platelets

- Whole blood derived platelets
- 50 ml
- Dose
 - 10-15 ml/kg
 - 4-6 units for an average adult
- Must transfuse within 4 hours after pooling
- Expected increment of 5000-10,000/ μ l/unit



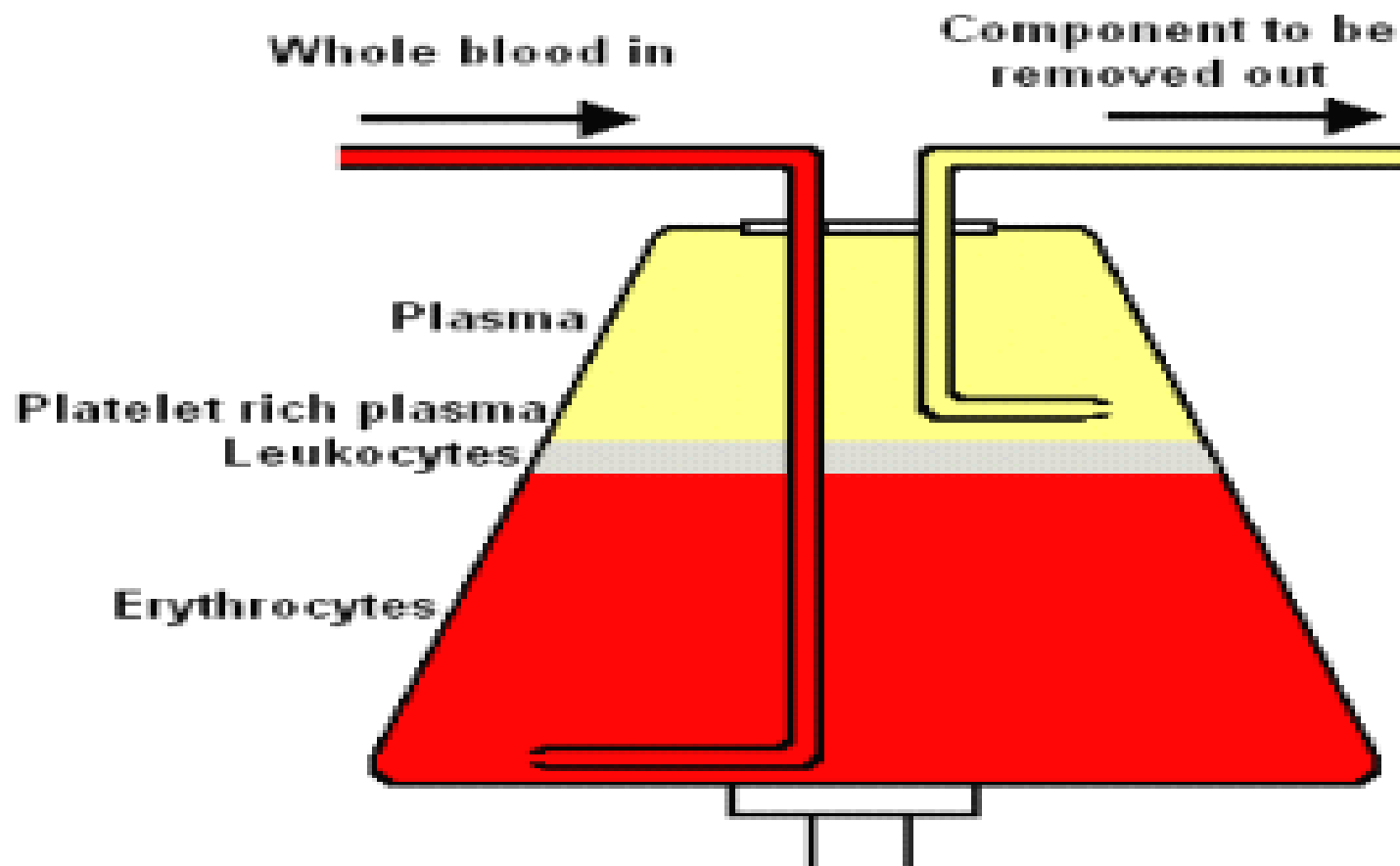
DONOR SELECTION CRITERIA

- Weight >50kg
- Age -18 to 60 yrs
- Atleast 72hrs from last plateletpheresis or 3 months from last blood donation.
- Hb >12.5 gm%
- Platelet count $>1.5 \times 10^{10} / \mu\text{l}$
- Absence of any illness.
- No H/O consumption of NSAIDs for last 7days
- Screening tests for HIV, HBsAg, HCV, Syphilis & Malaria.

PLATELETS- BLOOD GROUP??

- Express ABO antigens
 - Will get best increment with ABO compatible platelets
- DO NOT express Rh antigens
 - Can give regardless of Rh type
 - However, platelet bag may contain a small amount of RBCs
- **Rh-negative woman of child-bearing age should receive Rh negative platelets**

APHERESIS



APHERESIS



Target finished products:

- Blood components (platelets and red cells) for transfusion
- Plasma for pharmaceutical manufacturing



PLATELETPHERESIS

- It is by 2 methods:

INTERMITTENT FLOW CENTRIFUGATION

- Haemonetics MCS - HAEMONETIC
- Haemonetic MCS+
- PCS/PCS2 - CORPORATION
- Autopheresis C - BAXTER(FENWAL)

HAEMONETIC MCS+



CONTINUOUS FLOW CENTRIFUGATION

- CS-3000 plus
- CS-3000+AMS
- Amicus - Baxter (Fenwal)
- Spectra - Gambro (Cobe)
- AS-104 - FRESSENIUS



AS-104

DONOR COUCH







Normal

Low

None

Return



LDP

RETURN

Returning Cells



RETURN
Transfer

65 ml/min
0 ml/min



1
Cycle

87
ml Plasma

23
ml Platelet

404
ml Processed

Prime

Draw

Return

STOP

Pump

Cuff

Modify

Save

Help

Start/Stop

Yes

No

Haemo Calculator

+

-

Apheresis Platelets/SDP

- It takes 6-8 cycles for complete apheresis procedure
- Time taken is 90 – 120 min
- One SDP unit is equivalent to 5-6 RDP's.
- Stored at 20-24⁰ C (RT) with agitation for *5 days*

■ Dosage of platelet concentrate in children

Body wt.	Dosage	Volume	Platelets
Upto 15kg	1 dose	30-50ml	$60 \times 10^9 / \mu\text{l}$
15-30kg	2 doses	60-100ml	$120 \times 10^9 / \mu\text{l}$
>30kg	4 doses	180-400ml	$240 \times 10^9 / \mu\text{l}$

MONITORING OF EFFECT OF PLATELET TRANSFUSION

- Bleeding time
- Platelet count after 1hr & 24hrs
- aPTT
- PT
- Fibrinogen levels

PLATELET DOSE RESPONSE

- Cessation Of Clinical Bleeding
- CORRECTED COUNT INCREMENT(CCI)

■ CCI at 1hr =

BSA= (body surface area in m^2)

- Expected CCI at 1hr >7500 per μl

= Platelet increment

EXPECTED PLATELET INCREMENT

If RDP transfused,

- in adult(70kg) is $5-10 \times 10^9 / \mu\text{l}$
- in children is $20 \times 10^9 / \mu\text{l}$
- in infant is $75-100 \times 10^9 / \mu\text{l}$

If SDP transfused

- in adult is $30-60 \times 10^9 / \mu\text{l}$

Failure of expected platelet increment

- Anti-HLA or platelet-antigen antibodies (after 10-60 minutes)
- After 24 hours
 - Fever
 - Infection
 - Drugs (Amphotericin)
 - Bleeding
 - Hepatosplenomegaly
 - Disseminated intravascular coagulation



**THANK
YOU**