

Blood components and appropriate transfusion

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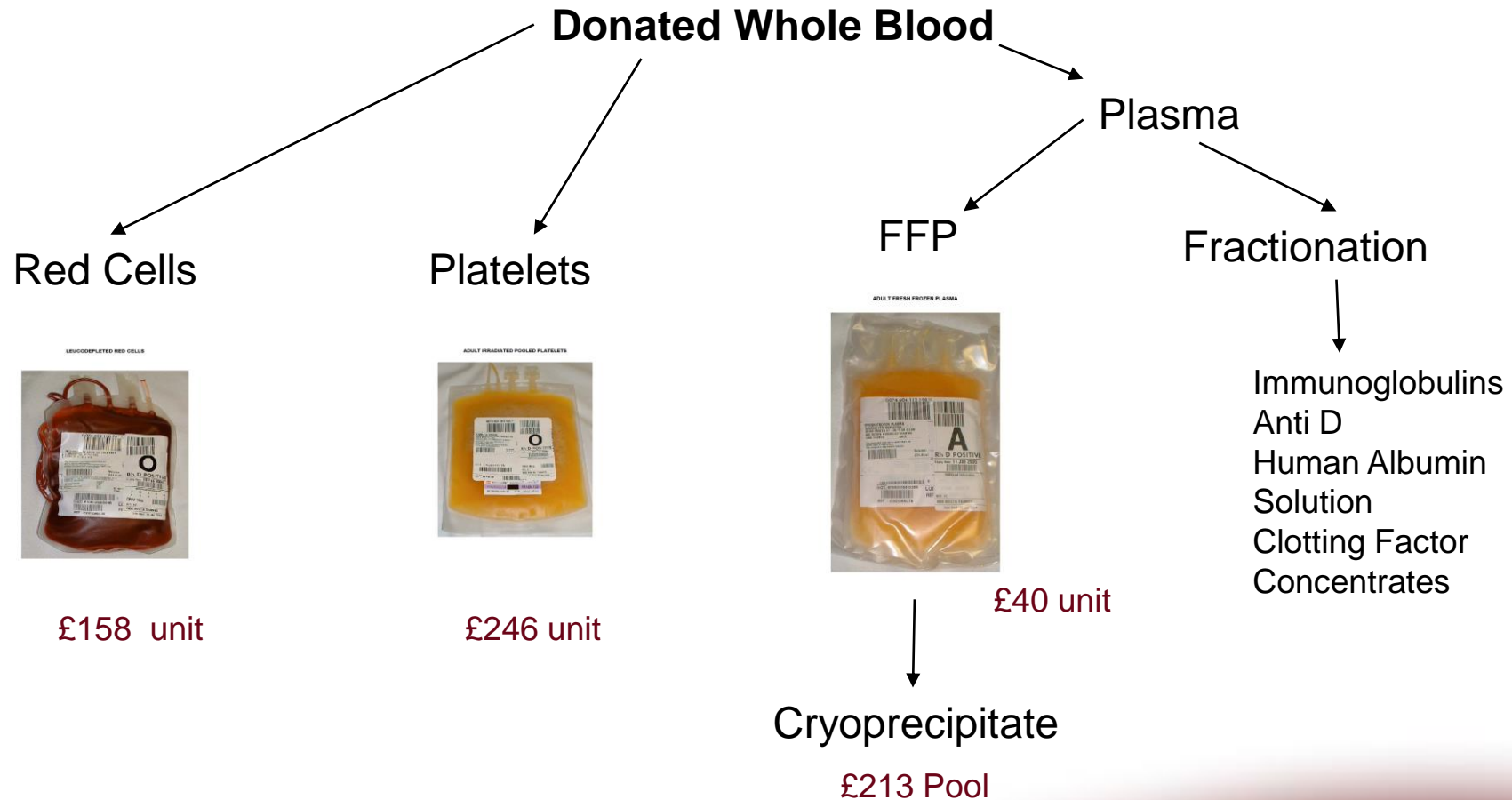


what are blood components?

- Platelets
- Red cells
- Fresh frozen plasma
- Cryoprecipitate
- White cells
- Blood products are any therapeutic substance prepared from human blood



Blood Components



Red cells



- What do red cells do in the body?
 - O² Transport
- 250 – 300 mls
- Leucodepleted (white cells removed) Why?
 - vCJD prion transmission
 - Reduces febrile non haemolytic transfusion reaction
- Stored at 4°c for 35 days



Platelets



- Indicated for the prevention and treatment of haemorrhage in patients with thrombocytopenia or platelet function defects.
- What do platelets do?
 - Form a 'plug' at the tissue damage site
- Stored at room temperature
 - Infection transmission risk
- Stored for 7 days - with agitation
- Availability issues

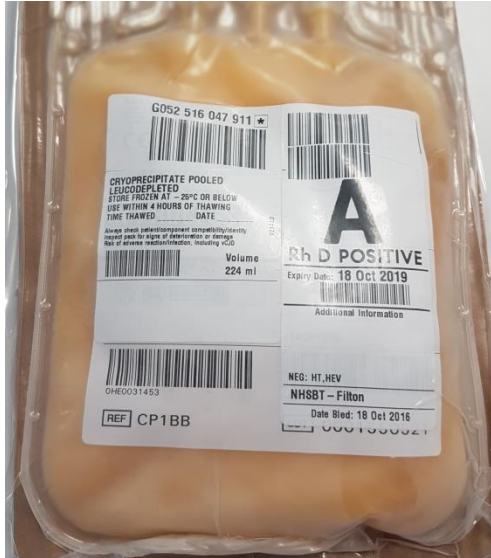


Fresh Frozen plasma



- What does FFP contain?
Clotting factors and fibrinogen
- Why is it transfused?
 - Although FFP is widely used - Current BSH guidelines suggest indications:
 - Treatment of TTP – plasmapheresis (octoplas)
 - DIC with bleeding
 - Certain single clotting factor deficiencies e.g factor v
 - **Has limited place in prophylaxis prior to liver biopsy with mild coagulopathy**
 - Major Haemorrhage
 - Should **NOT** be used to reverse warfarin
- 200-300mls per unit
- Frozen 2 years, expires 24hours post thawing

Cryoprecipitate



- Concentrated form of fibrinogen
- Indication inherited or acquired deficiency eg DIC, Major haemorrhage
- Frozen for 2 years
- Pooled products = 5 donors per pack



Factors to consider

- Risks
- Limited supply
- Cost
- Transfusion thresholds



Questions

- Does this person really need a transfusion?
- Are there alternatives?



Alternatives

- Iron po/iv – anaemia management plan
- Erythropoetin injections – renal anaemia, can support some cancer treatments, selective MDS patients
- B12 and folate – check haematinics, - pernicious anaemia, lack of vitamins in diet, medication (anti convulsants, PPI) - B12 supplements, Folic acid
- Vitamin K – insufficient dietary Vit K –inability to activate clotting cascade
- Prothrombin complex concentrate (beriplex, octoplex)



Adjuncts

- Cell salvage – intra or post op
- Tranexamic acid – pre op, trauma
- Fibrin glue
- Reduce unnecessary blood tests – iatrogenic anaemia



Clinical scenario

80 yr ♀ Hb 80g/L and with MDS

➤ Do they need a transfusion?

- Signs and symptoms
- Comorbidities
- Natural history of the disease
- Alternatives/adjuncts
- Number of units
- Speed of transfusion
- Further review

30 yr ♀ Hb 80g/L post partum

➤ Do they need a transfusion?

- Signs and symptoms
- Comorbidities
- Natural history of the disease
- Alternatives/adjuncts
- Number of units
- Speed of transfusion
- Further review



other considerations

- Chronically transfused e.g MDS, thalassaemias
 - Changing picture
 - Increasing age → increasing frailty and comorbidities → changing requirements
 - Look out for other reasons for increasing transfusion requirements e.g iron deficiency



Realistic about what transfusions can achieve



Summary

- Blood from a donor is filtered, centrifuged and then separated into blood components: red cells, platelets, FFP and cryoprecipitate.
- Each component has a role but the risks of transfusion, limited supply and costs mean that they need to be used judiciously and appropriately.
- Consider alternatives and adjuncts to transfusion with each patient.
- Remember that each patient has different needs and these will also change with time.



- Thank you for listening



Any Questions

