NORTH EAST & YORKSHIRE REGIONAL TRANSFUSION COMMITTEE

NHS Blood and Transplant

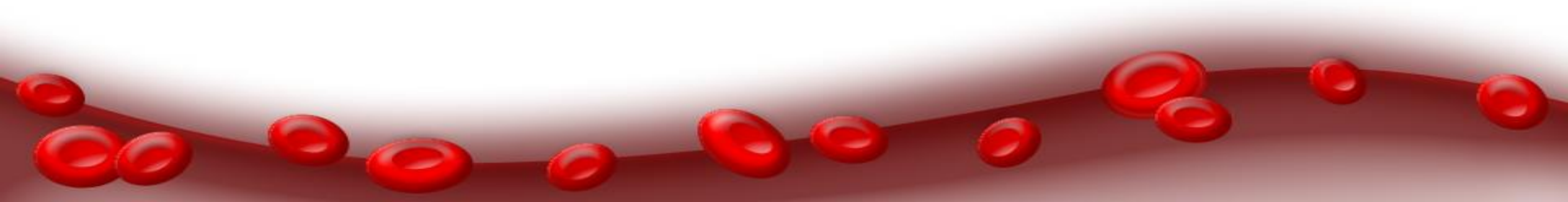
Blood components and appropriate transfusion

Presented by the North East & Yorkshire Non-Medical Authorisation working group

Caring Expert Quality

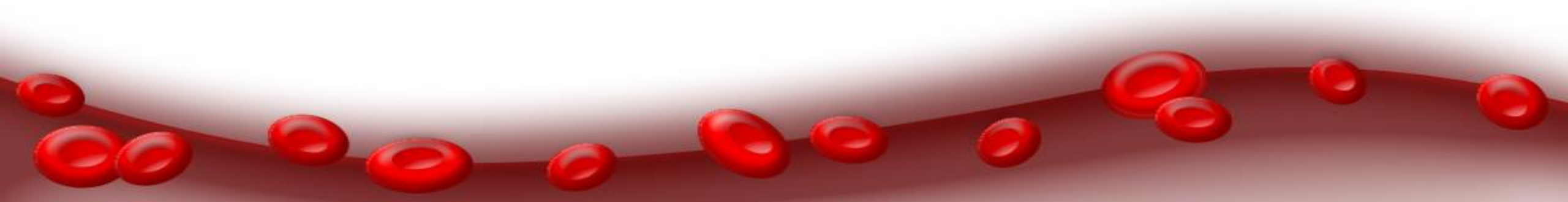
Content

- Blood components – what are they
- Purpose of different components
- Alternatives and adjuncts to transfusion
- Clinical scenario
- Summary



what are blood components?

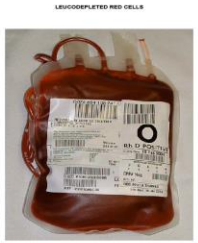
- Red Cells
- Platelets
- Fresh frozen plasma
- White Cells
- *Cryoprecipitate*
- Blood products are any therapeutic substance prepared from human blood



Blood Components

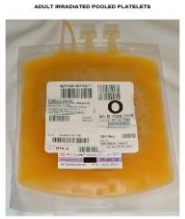
Donated Whole Blood

Red Cells



£184 unit

Platelets



£275 unit

Plasma

FFP

£47 unit

Pooled Cryoprecipitate

£237 Pool

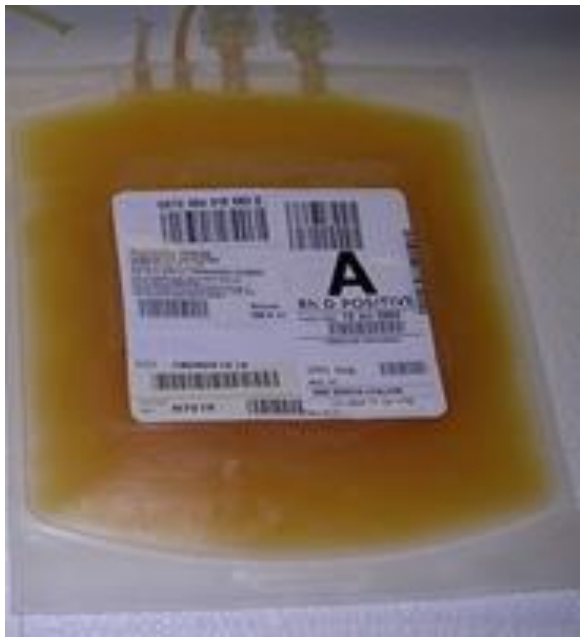
Fractionation

Immunoglobulins
Anti D
Human Albumin Solution
Clotting Factor Concentrates

Red cells

- What do red cells do in the body?
  - O^2 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

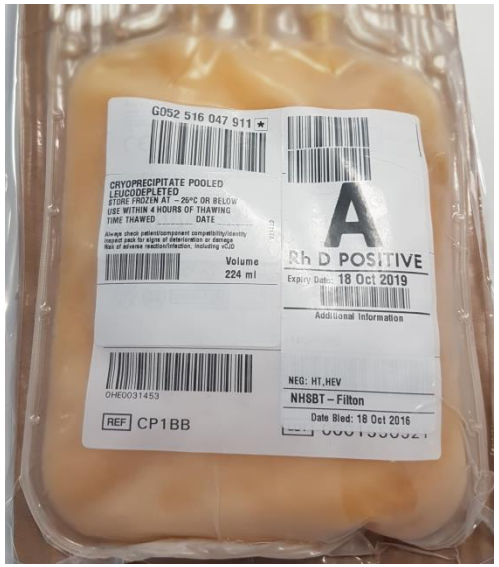
➢ **Has limited place in prophylaxis prior to liver biopsy with mild coagulopathy**

➢ 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

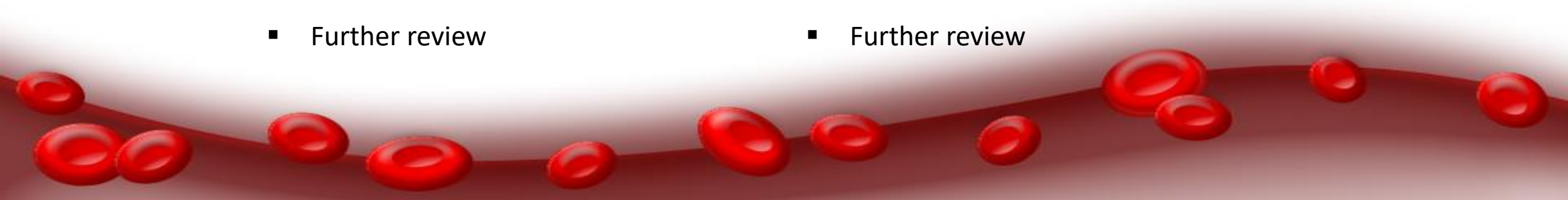
Clinical scenario

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

NHS
Blood and Transplant

Any Questions