Development of a Standardized Visual Inspection Aid for Plasma

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Disclosure

• None

Objectives

• Explain Whole Blood Processing
• Define Plasma Inspection Criteria
• Differentiate Plasma Quality Acceptability
• Describe Standardization of Plasma Quality Interpretation
• Evaluate Success of Plasma Inspection Aid
Whole Blood Processing - 1

- Whole blood (WB) is delivered by Donor Services
- Product code labels are applied and units are hung to filter

Whole Blood Processing - 2

- Filtered WB units are centrifuged.
- Then the plasma is manually expressed into a separate bag.
Whole Blood Processing - 3

- Red Blood Cell (RBC) and plasma bags are separated
- Visual inspection is performed
- RBC has segments made, is documented in the computer, and refrigerated
- The plasma is weighed, documented and frozen

Inspection Criteria for Plasma

- Color
- Lipemia
- Clots
- Contaminants
- Bag issues
• Is there a standard for RBCs in plasma?
• What volume of RBCs is acceptable in plasma?
• What does plasma look like at different RBC concentrations?

Is there a standard for RBCs in plasma?
• No regulatory standard
• The American National Red Cross “Visual Inspection Reference Guide”
  • Photos of normal plasma
  • Photos of normal plasma with red cells
  • No color or RBC concentration cut-off
What volume of RBCs is acceptable in plasma?

- Pathogen Reduction Technology we use for platelets has a specification of <4 \times 10^6 \text{ RBCs/mL}.
- This RBC concentration is an instrument limitation, not a patient care recommendation.
- The guideline was used to help set a cut-off for acceptable vs unacceptable plasma.

Plasma: Variation in RBC Concentration

0.0 mL – 0.50 mL
**Determination of Visual Cut-off**

- Color differences were observed by multiple techs to establish a visual cut-off.
- Visual cut-off was determined to have an RBC concentration of approx. $3.3 \times 10^6$ RBCs/mL.

**Standardized Visual Inspection Aid**

- No regulatory standards for red blood cells (RBCs) allowed in plasma.
- No visual inspection guide available that shows unacceptable limits for plasma.
- A standardized plasma inspection aid could be used to provide consistency across multiple work units.
Creation of Plasma Inspection Aid

- Used plasma units that were created when determining the variation in RBC concentration and its effect on the plasma color
- Cut off for acceptable vs unacceptable was determined visually as well as mathematically
- Professional photos were taken of sample units to provide an easy to use aid
Implementation and Outcomes

- Standard visual cut-off easier to determine plasma outcome.
- Discard rate: implementation 2%, improved to 1%
- Easy to use, convenient
- Revised cut-off concentration is $2.2 \times 10^6$ RBCs/mL

Survey Results

- 84% use the aid
- 87% aid is helpful
- 92% commented on how aid improved visual inspection
- Consistency, Standardization and Scientific Support
Review of Objectives

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Thank You