Blood and Blood Products Transfusion in Obstetrics and Gynecology

By Muhammad M. El Hennawy, MD [2]

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Transfusion Science

It involves
the procedures
and testing required
for the preparation
and transfusion
of blood
and blood
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Components Of Blood

- Cells
- Plasma
- Molecules & ions
- Water

Cells
- Erythrocytes
- White cells
  - Granulocytes
  - Neutrophils
  - Eosinophils

Function
- Medium of transport
  - Oxygen
  - Carbon dioxide
- Other
  - Ions
  - Carbohydrates, proteins, fats
- Immune
<table>
<thead>
<tr>
<th>Whole blood</th>
<th>Blood components</th>
<th>Plasma fractions</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Fresh-old</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packed red cells</td>
<td>platelets</td>
<td>Cryoprecipitate</td>
</tr>
<tr>
<td>DIIVC</td>
<td>washed RBC's</td>
<td>when fibrinogen level is less than 80-100 mg/dL</td>
</tr>
<tr>
<td>Massive haemorrhage</td>
<td>when platelet count less than 50,000/cmm or when massive blood loss or replacement has occurred</td>
<td></td>
</tr>
<tr>
<td>Major liver trauma</td>
<td>when PT &amp; PTT are higher than 1.5 times control levels</td>
<td></td>
</tr>
<tr>
<td>Bleeding associated with liver disease</td>
<td>All clotting factors; no plasma proteins</td>
<td></td>
</tr>
<tr>
<td>-Leukopoor RBC's</td>
<td>when whole blood not available for exchange transfusion</td>
<td></td>
</tr>
<tr>
<td>Pts with febrile, non-hemolytic reactions to plasma WBC's</td>
<td>Platelet concentrates</td>
<td>normal dose: 12-20 units</td>
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<tr>
<td></td>
<td></td>
<td>Clotting disorders</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Haemophilia</td>
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<tr>
<td></td>
<td></td>
<td>Immunoglobulin preparations</td>
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<tr>
<td></td>
<td></td>
<td>Saline albumin solution</td>
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<tr>
<td></td>
<td></td>
<td>Salt-poor albumin</td>
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Blood in History

- China, 1000 BC
  The soul was contained in the blood.

- Egyptians bathed in blood for their health.

- Romans drinking the blood of
  fallen gladiators to gain strength and vitality and to cure
  epilepsy.

- the practice of bathing in blood as it cascaded from a
  sacrificial bull, was practiced by the Romans.
- Animal to animal --- Richard Lower, 1665
- Animal to human --- Jean Denis, 1667

- Human to human
  -- 1818, James Blundell
  -- 1900 The elucidation of the ABO blood group system by Landsteiner
  -- 1914 Lewisohn - used citrate
  -- 1940 Landsteiner and Wiener, in, describe Rh typing
Major Innovations in the 20th Century

- Compatibility testing
- Anticoagulant solutions
- Preservative solutions
- Refrigeration
- Blood Banks
- Venous access
- Plastic blood bags
- Component administration
- Infectious disease testing
- High-risk donor screening
Regarding Blood Transfusion in obstetrics:

**TWO** main causes of maternal morbidity and mortality are:

1- **CHRONIC ANEMIA OF PREGNANCY**
2- **MAJOR OBSTETRIC HAEMORRHAGE**
1- CHRONIC ANEMIA OF PREGNANCY
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[Diagram showing various blood components and their interactions]
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[2] http://www.obgyn.net/authors/muhammad-m-el-hennawy-md

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