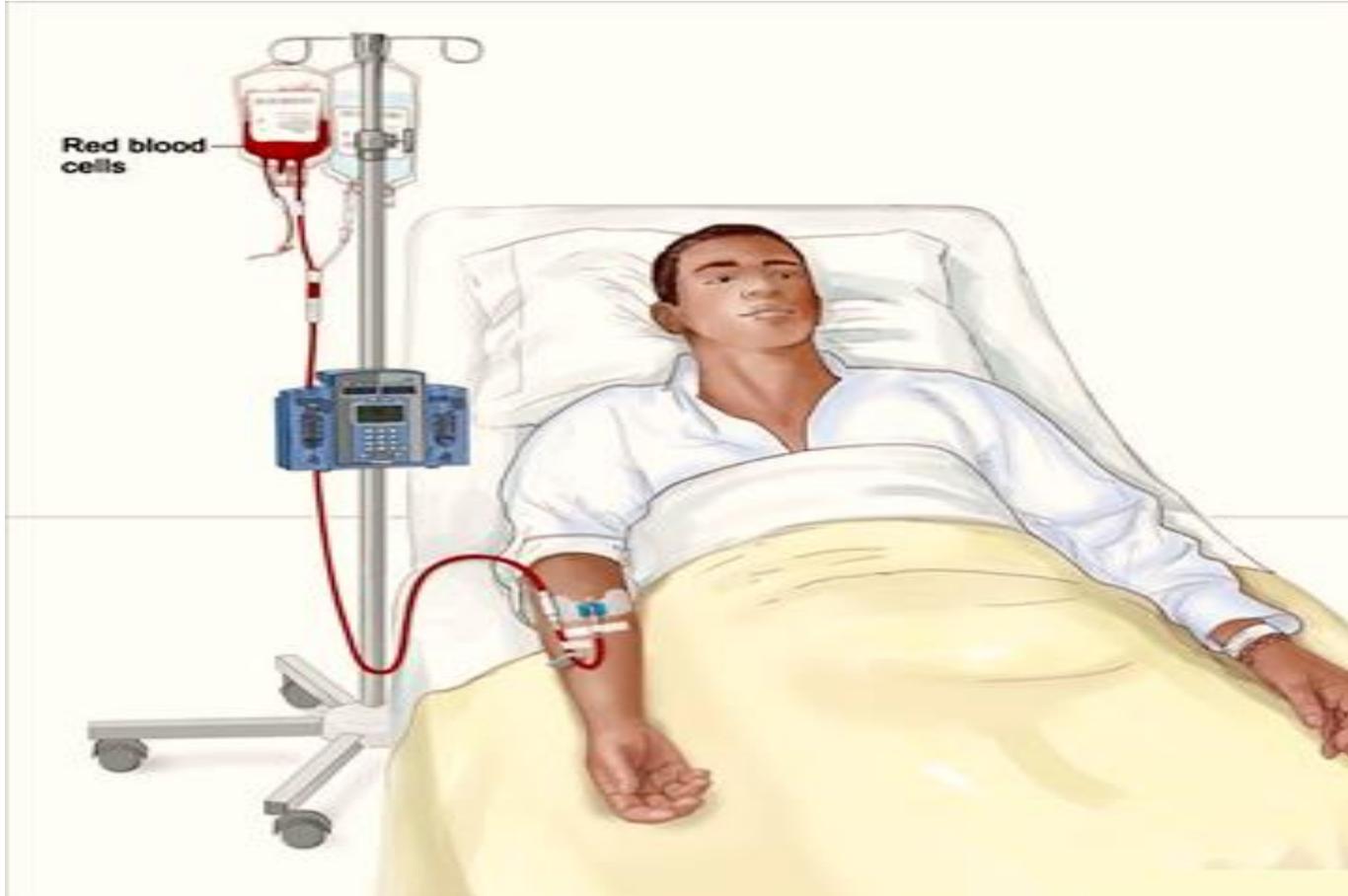


Blood Transfusion



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STUDY OBJECTIVES

By the end of the lecture the student will able to:

1-Understand blood transfusion and effect of incompatible blood transfusion.

● Blood Transfusion:

Indications

- 1- ↓↓ Of blood volume ($> 20\%$ is lost as in hemorrhage).
- 2- ↓↓ Of RBCs (as in sever anemia).
- 3- ↓↓ WBCs (as in leucopoenia).
- 4- ↓↓ Platelet (as in thrombocytopenic purpura).
- 5- ↓↓ Coagulation factors (as in hemophilia).
- 6- ↓↓ Of plasma protein (as in hypoproteinemia).

Dangers

I-Danger of incompatibility:

1- Agglutination →

A-Blocks of capillaries → sever pain.

B-Blocks of blood vessels of brain (→ paralysis) or heart (→ ischemia).

2- Hemolysis of RBCs →

A-Jaundice due to excess formation of bilirubin.

B-Renal failure (& the patient died within 2 weeks) due to:

- Precipitation of Hb. and blocking of renal tubules.

- Hypotension due to liberation of histamine → vasodilatation.

- Hyper-kalemia (\uparrow K^+ level).

II-Transmission of diseases

e.g. AIDS, hepatitis (B& C), syphilis & malaria.

III-Tetany due to $\downarrow\downarrow$ the level of Ca^{++} .

IV-Transfusion of excess amount \rightarrow heart failure.

V-Allergy (fever, shivering . etc).

Precautions Before Blood Transfusion

1. Blood is obtained from healthy donors: **I- In donors:**
 - Age =18-60 y.
 - Weight: more than 55 kgm.
 - Blood pressure within normal range.
 - **Hb%** is not less than 90% (13gm/dl).
2. **Blood grouping** (for ABO system and Rh factor).
3. **Cross matching** (for subgroups e.g. M, N, P, Lewis, Kell).
4. No Rh-ve **female** (at any age) must be received Rh +ve blood. **II- Recipient:**
5. The blood should be free from **diseases** **III- Blood:**
6. Should be **recent** blood (not more than 21 days)

**TEST YOUR
SELF**

MCQs

1-Blood transfusion reactions:

- A. Are due to reactions between donor RBCs and recipient plasma
- B. Are due to reactions between recipient RBCs and donor plasma
- C. Blood grouping alone prevents its occurrence
- D. Rapid blood infusion is indicted for its prevention
- E. Does not occur in rhesus incompatibility

MCQs

2- Before blood transfusion, which of the following should be done:

- A. Erythrocyte sedimentation rate.
- B. Osmotic fragility of R.B.C.'s.
- C. Blood indices.
- D. Cross matching test.

MCQs

3- Careful blood matching is performed prior to transfusing blood in order to avoid which scenario?

- A. Newborn haemolytic disease
- B. The recipient's antigens attacking the red blood cells in the transfusion
- C. The recipient's antibodies attacking the red blood cells in the transfusion
- D. The antigens on the recipient's red blood cells reacting with the antibodies in the transfused blood

MCQs

4- Incompatible blood transfusion leads to :

- a) heart failure.
- b) renal failure.
- c) polycythemia.
- d) only A & B are correct.

MCQs

5-Which transfusion will result in a transfusion reaction? Assume that the patient has never had a transfusion.

- A. Type O Rh-negative packed cells to an AB Rh-positive patient
- B. Type A Rh-positive packed cells to an A Rh-negative patient
- C. Type A Rh-positive packed cells to an O Rh-positive patient
- D. Type AB Rh-positive packed cells to an AB Rh-positive patient

MCQs

6-A mismatched blood transfusion results in:

- A. Mainly agglutination of a donor's RBCs.
- B. Mainly agglutination of a recipient's RBCs.
- C. Equal agglutination of both recipient's and donor's RBCs.
- D. Development of immunity.

MCQs

7-Before blood transfusion, which of the following should be done:

- A. Erythrocyte sedimentation rate.
- B. Osmotic fragility of R.B.C.'s.
- C. Blood indices.
- D. Cross matching test.

MCQs

8- Incompatible blood transfusion may cause all the following EXCEPT:

- A. Haemolytic jaundice.
- B. Anuria.
- C. Hypertension.
- D. Renal tubular damage.

MCQs

9-Transfusion reaction may causes:

- a) Jaundice.
- b) Increase plasma hemoglobin concentration.
- c) Renal failure.
- d) Fever.
- e) All of the above.

MCQs

10-Complicaions of blood transfusion include all the following EXCEPT :

- a) renal failure.
- b) heart failure.
- c) hypotension.
- d) hypokalemia.

MCQs

11-Which transfusion will result in a transfusion reaction? Assume that the patient has never had a transfusion.

- A. Type O Rh-negative packed cells to an AB Rh-positive patient
- B. Type A Rh-positive packed cells to an A Rh-negative patient
- C. Type A Rh-positive packed cells to an O Rh-positive patient
- D. Type AB Rh-positive packed cells to an AB Rh-positive patient

MCQs

12-Incompatible blood transfusion leads to :

- a) heart failure.
- b) renal failure.
- c) polycythemia.
- d) all of the above.
- e) only A & B are correct.

MCQs

13-The following diseases are transmitted by blood transfusion except:

- a) AIDS
- b) Hepatitis A
- c) Hepatitis B
- d) Syphilis

MCQs

14-The following is not a characteristic complication of massive blood transfusion:

- a) Transmission of the HIV virus
- b) Hypocalcemia
- c) Hemolysis of RBCs
- d) Myoglobinuria

MCQs

15-Before blood transfusion, which of the following should be done:

- A. Erythrocyte sedimentation rate.
- B. Osmotic fragility of R.B.C.'s.
- C. Blood indices.
- D. Cross matching test.
- E. Bleeding time

MCQs

16-Major reaction is tested during cross matching tests in blood transfusion between:

- A. Donor's antibodies and recipient's antigens.
- B. Donor's antibodies with recipient's antibodies.
- C. Donor's antigens with recipient's antibodies.
- D. All the above is true.

MCQs

17-Mismatched blood transfusion causes :

- a) polycythemia.
- b) hypotension.
- c) decrease viscosity of the blood.
- d) increased heart rate.

MCQs

18-To preserve blood for transfusion later

- A. Dilute with equal volume of 0.9% saline
- B. Add solution of sodium citrate
- C. Add solution of calcium chloride
- D. Add fibrinogen

MCQs

19-Incompatible blood transfusion may cause all the following EXCEPT:

- A. Haemolytic jaundice.
- B. Anuria.
- C. Hypertension.
- D. Renal tubular damage.

MCQs

20-Blood transfusion reactions:

- A. Are due to reactions between donor RBCs and recipient plasma
- B. Are due to reactions between recipient RBCs and donor plasma
- C. Blood grouping alone prevents its occurrence
- D. Rapid blood infusion is indicted for its prevention
- E. Does not occur in rhesus incompatibility

MCQs

21-Which blood unit carries the least risks for inducing an immediate transfusion reaction into a B-positive recipient?

- A) Whole blood A positive
- B) Whole blood B negative
- C) Whole blood AB negative
- D) Whole blood AB positive

Answers

MCQs

1-A	2-D	3-C	4-D	5-C
6-A	7-D	8-C	9-E	10-D
11-C	12-E	13-B	14-D	15-D
16-C	17-B	18-B	19-C	20-A
21-B				