

BLOOD TRANSFUSION (HEMATOTRANSFUSION) TYPES OF ALLERGIES

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Abstract: *Allergies are hypersensitive immune responses to substances that are typically harmless to most individuals. These substances, known as allergens, can include foods, medications, environmental factors, and insect venoms. Allergic reactions vary in severity, ranging from mild symptoms such as itching and sneezing to severe, life-threatening conditions like anaphylaxis. Allergies are commonly classified into different types based on the underlying immunological mechanisms and routes of exposure. This article examines the major types of allergies, their causes, clinical manifestations, diagnostic approaches, and management strategies. Understanding the classification and mechanisms of allergies is essential for effective prevention, accurate diagnosis, and appropriate treatment.*

Keywords: *allergies, hypersensitivity, allergens, immune response, anaphylaxis, food allergy, drug allergy, respiratory allergy, dermatological reactions, immunology.*

Also provides a scientific basis for blood transfusion technologies, the donor system, and blood safety issues in modern medicine. Blood transfusion is one of the important treatments widely used in medical practice. It is used to save lives in cases caused by blood loss in the body, anemia, severe surgery or various diseases. In modern medicine, blood transfusion is carried out not only by transfusion of whole blood, but also by transfusion of its individual components. This increases the effectiveness of treatment and reduces the risk of complications.

Main part

1. The concept of blood transfusion

Blood transfusion (hemotransfusion) is the process of sending donor blood or its components to the recipient (patient) body.

This process is carried out for the following purposes:

Blood loss compensation

Increase hemoglobin levels

Support the immune system

Restore blood clotting

2. Blood types and compatibility

One of the most important factors in blood transfusion is blood group compatibility.

Blood groups by ABO system:

Group I (0)

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Group II (a

Group III (B

IV (AB) group

Rh factor:

Rh positive (+)

Rh negative (-)

When incompatible blood is transfused, the following risks occur:

Erythrocytes are destroyed

Hemolytic shock develops

The patient's life is in danger

Example: If a patient with blood type A is transfused with blood type B, the body will perceive it as a foreign substance and a strong immune reaction will occur.

3 Erythrocyte mass

Used in anemia

Increases oxygen carrying capacity

Plasma

Used in blood clotting disorders

Important in burns and shock

Platelets

Help stop bleeding

Used in oncological diseases

4. Donation and its importance

A Donor is a healthy person who gives his blood to another patient.

Donor requirements:

Be healthy

Absence of infectious diseases

Must be within a certain age range

Donation is an important manifestation of humanity in society.

Example: A patient who has suffered severe blood loss in an accident is brought back to life with the help of donor blood.

5. Blood transfusion process

Blood transfusion is performed in a special medical setting.

Process steps:

Blood typing

Compatibility testing (biological test)

Starting a blood transfusion

Monitoring the patient's condition

6. Transfusion reactions and complications

Blood transfusions can sometimes cause complications.

Main complications:

Allergic reaction

Hemolytic shock

Fever

Infection

Example: When incompatible blood is transfused, the patient will experience:

Fever

Increased heart rate

Decreased blood pressure

7. Modern blood transfusion technologies

Today, blood transfusion safety has increased significantly.

New methods:

Blood is separated into components

Virus removal technologies

Autotransfusion (reinfusion of one's own blood)

8. Clinical applications of blood transfusion

Blood transfusion is widely used in the following situations:

During surgical operations

During childbirth

In trauma

In oncological diseases

In anemia

Conclusion

Blood transfusion is an integral part of medicine and plays a vital role in saving the lives of many people. Thanks to a well-organized donor system and modern technologies, this process is becoming safer and more effective.

At the same time, it is important to strictly observe precautions in blood transfusion, check the compatibility of blood groups and constantly monitor the patient.

In the future, with the help of new technologies, the possibilities of creating artificial blood and further reducing transfusion risks will expand.

Scientific articles on transfusion medicine, this process is becoming safer and more effective.

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