

Transfusion Medicine and its Risk Factors

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Received date: September 02, 2021; **Accepted date:** September 16, 2021; **Published date:** September 23, 2021

Citation: Ray C (2021) Transfusion Medicine and its Risk Factors. J Clin Exp Pathol 11: e137.

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Description

Transfusion medicine is a branch of medicine that covers all aspects of blood transfusion and blood components, including those related to blood vigilance. Doctors specializing in blood bank/transfusion medicine are responsible for maintaining an adequate blood supply, the safety of blood donors and recipient patients, and the proper use of blood. It includes topics such as blood donation, immunohematology and other blood transfusion-transmitted diseases laboratory testing, clinical blood transfusion practice management and monitoring, patient blood management, therapeutic apheresis, stem cell collection, cell therapy, and coagulation. Laboratory management and understanding of state and federal regulations related to blood products are also important parts of this field. In most countries, experts in immunohematology and transfusion medicine provide expert advice on the rational use of large amounts of blood transfusions, difficult/incompatible blood transfusions, and professional treatment of blood products such as irradiated blood/washed blood products. A blood donation center is a facility that collects blood components from selected blood donors. It can be whole blood or it can only collect individual components like plasma or platelets through apheresis. These blood components are then transported to a central location for processing, such as fractionation, analysis, and redistribution. Tests include determining blood type and detecting infectious diseases. Whole blood is divided into red blood cells, platelets, and plasma, and plasma can be further refined into individual components such as albumin, clotting factor concentrates, and immunoglobulin.

The blood bank is part of the clinical laboratory where laboratory scientists store and distribute blood components. Both of these areas are usually supervised by transfusion medicine specialists. Transfusion medicine used to be a branch of clinical pathology; however, the field

has now expanded to hospital-based clinical specialties. The practice of blood transfusion medicine involves both the laboratory and clinical aspects of blood transfusion, because in the case of a large number of blood transfusions or transfusion reactions, the communication between the blood bank and patients, therapists and other medical personnel is very important. In order to ensure the safety of blood components, there must be standardized procedures and quality assurance systems that cover all aspects of the blood transfusion chain from donation to blood transfusion results.

Risk Factors

Within the hospital, blood transfusion committees are established to ensure safe blood transfusion practices in the hospital, such as adherence to standards and guidelines, review of transfusion reactions, and management of the blood supply. These multidisciplinary committees are comprised of experts in transfusion medicine, transfusion nurses, laboratory scientists, physicians, and staff from the hospital's quality and management team. If you have suffered an injury, blood loss during surgery, or a medical condition that affects the blood or its components, a blood transfusion can provide blood or blood components. The blood usually comes from the donor. Blood banks and healthcare providers ensure that blood transfusion is a safe and low-risk treatment. Blood transfusion is generally considered safe, but there are risks of some complications. Mild complications and rare serious complications can occur during blood transfusion or after a few days or more. The most common reactions include allergic reactions, which can cause hives and itching, as well as fever. Clinical studies have identified blood transfusion as an independent risk factor for immediate and long-term adverse consequences, including increased risk of death, myocardial infarction, stroke, kidney failure, infection, and malignancy.