Chapter 7

BLOOD TRANSFUSION IN HEART SURGERY

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► Introduction

Open heart surgery is the type of surgery where blood transfusions are frequently performed despite the developing technology and surgical techniques. The need for blood and blood products is increasing in complex cardiac surgeries, especially in cardiovascular surgery and aortic surgery, particularly with cardiopulmonary bypass. This requirement is not due to the high likelihood of intraoperative bleeding but multifactorial. Mechanical effects during blood circulating in extracorporeal perfusion system cause a decrease in platelet and coagulation factors. In addition, hemodilution and activation of hemostatic system and hypothermia cause blood loss in intraoperative and postoperative period. This results blood transfusion. In addition, oxygen requirement and presentation of critical tissues in cardiac patients is due to hematocrit. This situation increases the importance of erythrocyte suspension transfusion. Despite all these reasons, blood transfusion causes infectious and noninfectious complications with high cost. Prevention of infectious complications is now possible with the help of developing technology. Therefore, today, noninfectious complications are more prominent.

As is the case in critically ill patients who require all blood and blood products transfusions, it is important for the anesthesiologist and the cardiovascular surgeon to optimize blood transfusion requirements in intraoperative and postoperative processes in cardiac surgery patients.

In blood transfusion; the main objective is to replace the blood volume with red blood cells, including erythrocytes, platelets, leukocytes, clotting factors

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Despite these developments, the need for blood and blood products was increased due to the increased number of operations. The increase in the frequency of blood transfusions increased complications like fever, allergic reaction, hemolytic reaction, hyperbilurubinemia, citrate toxicity, air embolism, circulatory loading, viral hepatitis in the blood, such as the possibility of increased infectious diseases brought with. Therefore, clinicians working in anesthesia and cardiovascular surgery departments should be well determine the benefit/ harm rate before transfusion of blood and blood products. As a clinician, he / she should have sufficient knowledge and experience about the necessity of the use of blood and its products and the treatment of possible complications.

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