Chapter 6

ANESTHESIA MANAGEMENT IN SPECIFIC HEART SURGERY OPERATIONS

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► Heart Transplantation and Anesthesia Management

Introduction

Cardiac transplantation is considered to be a surgical treatment in patients with end-stage cardiac dysfunction who do not respond to all medical treatments (Table 1: Patient groups that may perform heart transplantation). However, in all organ transplantations, including the heart, the following stages are important.

- Detection of potential donors
- The decision on the suitability of the cadaveric organ for transplantation

Patients who are not yet dead but are likely to develop brain death are potential donors. The patient is the donor candidate who has brain death. The suitability of the donor heart to be used in heart transplantation depends on some conditions. These:

- No heart disease present. The absence of stenosis in the coronary artery is important, although not necessarily. Lack of lesions in the coronary arteries.
- The base gap in arterial blood gas should not be above -10 mEq.
- When connected to the mechanical ventilator, partial oxygen in arterial blood should be above 80 mm Hg.
- The donor should not have more than 6 hours of hypotension and no long-term resuscitation.
- Inotropic treatment requirement should not exceed 5 mcg/kg/minute dose of dopamine.

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After heparin is made, the appropriate ACT (Activated Clotting Time) value is reached. The appropriate ACT value is over 400-450 seconds. It can be repaired in two ways with or without total circulatory arrest. Although there are different approaches at the hypothermia level, moderate hypothermia is applied to patients who will not enter into total circulatory arrest and deep hypothermia is applied for total circulatory arrest. In cerebral protection, cerebral perfusion technique is used as an anterior and retrograde serbral perfusion techniques and their comparative studies are performed. All these applications are for reducing the risk of postoperative neurological complications, one of the most frequent complications of morbidity. $NaHCO_3$ is applied to metabolic acidosis during hypothermia and circulatory arrest. When the aortic repair is over, and when the warm-up starts, inotropic support treatment is started for the heart to work if needed. The biggest problem that can be encountered is coagulopathy with surgical bleeding. Therefore, fresh frozen plasma, whole blood, erythrocyte suspensions and platelet suspensions should be ready and given to the patient. Pharmacological agents such as aminocaproic acid or aprotinin are also administered for bleeding control. Patients are transferred to the intensive care unit and connected mechanical ventilator.

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