

Intraaortic balloon counterpulsation/secondary school (nurse)

- A method of temporary mechanical support of hemodynamics, designed primarily for the treatment of cardiogenic shock in cases where catecholamine therapy fails.
- In balloon counterpulsation (IABP), there is a regular, heart-cycle-synchronized expansion and emptying of a long balloon with helium, which is located in the upper region of the descending aorta:
 - in diastole, the balloon is inflated → an increase in blood pressure in front of the balloon, an increase in the flow věnčitými tepnami;
 - at the beginning of systole, the balloon is emptied → a decrease in outflow resistance → an increase in the flow through the aorta.

Effect of IABP

- Reduction of cardiac load;
- increasing the supply of nutrients to the heart muscle;
- reducing myocardial oxygen consumption (by increasing the minute volume, slowing the heart rate).

Indication

- Cardiogenic shock;
- acute coronary syndrome unresponsive to standard therapy;
- low cardiac output syndrome;
- cardiac surgical operations;
- support in ECMO;
- septic or anaphylactic shock – circulatory support:

→ important early start, before the complete collapse of circulation.

- „Preventive“ introduction before cardiac surgery in extremely high-risk patients or before major surgery of another type in cardiac patients in advanced heart disease.

Contraindications

- Thrombolytic therapy;
- septic state;
- atherosclerosis obliterans;
- aortic regurgitation;
- trauma of the aorta;;
- aortic aneurysm.

Complications

- Ischemia of the lower extremities (thromboembolism);
- the emergence of infection;
- aortic rupture;
- thrombocytopenia;
- technical – balloon rupture, gas leakage, device failure.

Prevention

- IABP only the necessary time;
- inspection of the lower extremities;
- bandage of the injection site after removal of the cannula.

Links

References

- KOLÁŘ, Jiří. *Cardiology for intensive care nurses*. 4. edition. c2009. ISBN 9788072626045.
- MANDÁK, J. – LONSKÝ, V. – ŽÁČEK, P.. *Intraaortic balloon counterpulsation*. [online]. ©2005. [cit. 2012-01-31]. <www.kardiologickeforum.cz>.