Primjena intraaortalne balonske crpke u kateterizacijskom laboratoriju

Intra-aortic balloon pump in the cardiac catheterization laboratory

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KLJUČNE RIJEČI: intraaortalna balonska crpka, kateterizacija srca.

KEYWORDS: intra-aortic balloon pump, cardiac catheterization.

CITATION: Cardiol Croat. 2014;9(9-10):476.

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Intraaortalna balonska crpka (IABP) je uređaj koji pruža mehaničku potporu srčanom radu, diastoličkim podizanjem tlaka u silaznoj aorti te povećava perfuzijski tlak u koronarnim arterijama. U aseptičnim uvjetima transfemoralnim putem punkcijom femoralne arterije postavlja se uvodnica kroz koju prolazi balon koji se pozicionira 2 cm ispod lijeve arterije subklavije, a iznad renalnih arterija. Prilikom napuhavanja balona lumen aorte se smanji približno 85-90%. Veličina promjera katetera se kreće u rasponu od 7-10 F, a zapremina balona se određuje prema tjelesnoj visini, a postoje veličine balona 30ccm, 40ccm i 50ccm.

Indikacije za postavljanje IABP su: kardiogeni šok, akutni infarkt miokarda, popuštanja lijeve klijetke, potpora kod visokog rizika u perkutanoj koronarnoj intervenciji, nestabilna angina pectoris, ventrikularne aritmije uzrokovane ishemijom miokarda, septički šok.

Kontraindikacije mogu biti apsolutne i relativne. Apsolutne su: hemodinamski značajna insuficijencija aortne valvule i aneurizma aorte, dok su relativne: ateroskleroza, terminalna faza bolesti, poremećaji zgrušavanja krvi. Postoji rizik od potencijalnih komplikacija koje mogu nastati s uporbom IABP, npr. ishemija donjeg ekstremiteta - nepravilan položaj katetera, oštećenje aortne stijenke - "struganje" katetera po intimi aorte, tromboza, embolija, infekcija, trombocitopenija te ruptura IAB-a. Može se pojaviti i pojačano krvarenje na mjestu ulaza katetera.

Iako se IABP najčešće koristi u kardiokirurgiji, ne smije se zanemariti važnost koju ima u stabiliziranju pacijenta u koronarnim jedinicama, kateterizacijskim laboratorijima, osobito u onima bez kardiokirurškog suporta.

Intra-aortic balloon pump (IABP) is a device that provides mechanical circulatory support by diastolic augmentation of pressure in the descending aorta thereby increasing the perfusion pressure in the coronary arteries. In aseptic conditions, a balloon is mounted on the catheter sheath which is inserted transfemorally through the femoral artery which is guided 2 cm below the left subclavian artery and above the renal arteries. During the inflation of the balloon, the lumen of the aorta decreases approximately by 85-90%. The diameter of the catheter ranges from 7-10 F, and the volume of the balloon is determined according to height, so that the size of the balloon can be 30ccm, 40ccm and 50ccm.

The indications for inserting IABP are: cardiogenic shock, acute myocardial infarction, left ventricular failure, support in high-risk percutaneous coronary intervention, unstable angina pectoris, ventricular arrhythmias induced by myocardial ischemia and septic shock.

Contraindications may be absolute or relative. Absolute contraindications are: hemodynamically significant aortic valve insufficiency and aortic aneurysm, while the relative contraindications are: atherosclerosis, end-stage disease, blood clotting disorders.

There is a risk of potential complications that can occur in connection with the use of the IABP. Let us mention the ischemia of the lower extremity - an abnormal position of the catheter, lesion to the aortic wall - "scraping" the aortic intima by the catheter, thrombosis, embolism, infection, thrombocytopenia and rupture of the IAB. Excessive bleeding at the site of insertion of the catheter may be caused as well.

Although IABP is commonly used in cardiology, we cannot ignore the importance it has in stabilizing patients in coronary care units, catheterization laboratories, especially those without cardiac support.

RECEIVED:
September 1, 2014