

## Perkutana koronarna intervencija u bolesnika s uznapredovalim stadijem zatajivanja srca

## Percutaneous coronary intervention in patients with advanced heart failure

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Liječenje bolesnika s ishemijskom kardiomiopatijom i uznapredovalim stadijem zatajivanja srca (eng. *advanced heart failure* – AHF) temelji se na optimalnoj medikamentnoj terapiji, ugradnji kardioverter-defibrilatora ili resinkronizacijskoj terapiji te koronarnoj revaskularizaciji. Odluku o kirurškoj revaskularizaciji (KR) je teško donijeti zbog visokog mortaliteta i morbiditeta procedure, nesigurne koristi s obzirom na nedostatak sigurnih predskazatelja (uključujući i vijabilnost miokarda) te nedorečenih smjernica. Rezultati STICHES studije ukazuju da KR snižuje mortalitet kod AHF bolesnika<sup>1</sup>. Perkutana koronarna intervencija (PCI) se čini kao razumna alternativa KR, međutim malo je studija koje uspoređuju KR i PCI kod bolesnika s AHF. Jedna od njih je opservacijska studija koja je pokazala veći rizik od infarkta miokarda (IM), manji rizik od moždanog udara i podjednak rizik smrti kod bolesnik koji su podvrgnuti PCI sa stentom koji izlučuje lijek (DES) naspram KR<sup>2</sup>. Bolesnici u kojih je postignuta kompletna revaskularizacija s PCI nisu imali veću učestalost IM. PCI u bolesnika s AHF smatra se visokorizičnom procedurom. Prema našem iskustvu, prethodno se moraju uzeti u obzir svi čimbenici, učiniti detaljan plan te provesti određene mjere. Izrazilo je bitno optimizirati klinički status bolesnika (poboljšati perfuziju i dekongestiju). U slučaju višezilne bolesti moramo težiti kompletnoj revaskularizaciji, ali postupno da bi se izbjegli opterećenje kontrastom (što može dovesti do plućnog edema i kontrastne nefropatije) i kardiogeni šok u slučaju okluzije arterije (zbog niske kontraktilne rezerve). Adekvatna mehanička potpora mora se uključiti na vrijeme<sup>3</sup>. Zbog niske razine komplikacija u usporedbi s izvantjelesnom membranskom oksigenacijom, lakoće korištenja i niske cijene, intraaortna balon pumpa je izrazilo pogodna za kratkotrajnu hemodinamsku potporu bolesnika u kojih se očekuje kratki ishemijski period za vrijeme PCI te bi ona u ovom scenariju mogla sačuvati svoje mjesto kao vrijedna pomoć.

The therapy for patients with ischemic cardiomyopathy and advanced heart failure (AHF) is based on the optimal medical therapy, device-based therapies (implantable cardioverter-defibrillators and cardiac resynchronization therapy) and coronary revascularization. The decision to perform coronary artery bypass grafting (CABG) is difficult because of higher operative morbidity and mortality, uncertain benefit (lack of predictive factors including viability testing) and undefined guidelines. Ten-year of the follow-up from the largest randomized trial (STICHES) of CABG compared with medical therapy showed a mortality benefit in CABG patients<sup>1</sup>. Percutaneous coronary intervention (PCI) seems to be reasonable alternative to CABG. However, there is a lack of clinical trials testing PCI versus medical therapy and CABG in AHF. The observational study that compared PCI using drug eluting stents with CABG in AHF patients showed no significant difference in death, greater risk of myocardial infarction and need for repeat revascularization but a significantly lower risk of stroke in PCI<sup>2</sup>. In PCI patients in whom complete revascularization was achieved, there was no difference in myocardial infarction between PCI and CABG. However, PCI in AHF is considered as a high risk procedure and should be initiated only after full consideration of various factors and after developing a detailed plan. In our experience, there are some measures that need to be performed in order to improve outcome and to avoid complications. Important is to optimize patient's clinical status and perform pulmonary decongestion. Staged approach to revascularization, especially in complex lesions, is preferred to avoid high total amount of contrast agents (leading to pulmonary oedema and contrast nephropathy) and cardiogenic shock in the case of abrupt artery closure (because of low contractile reserve). Suitable PCI support equipment should be timely considered<sup>3</sup>. Because of low rate of complications (compared to the extracorporeal membrane oxygenation), easy to use and low price (compared to Impella), the intra-aortic balloon pump is especially convenient for short term haemodynamic support in patients where short ischemic period is expected during PCI.

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