Popuštanje srca i kardiogeni šok u akutnom infarktu miokarda

Heart failure and cardiogenic shock in acute myocardial infarction

Vjeran Nikolić Heitzler

Clinical Hospital Sestre milosrdnice, Zagreb

Akutni srčani infarkt (AIM) može biti popraćen s komplikacijama. Rane komplikacije su aritmije i smetnje provođenja, popuštanje lijeve klijetke sve do kardiogenog šoka i mehaničke komplikacije (ruptura slobodne stijenke lijeve klijetke, ruptura interventrikulskog septuma i disfunkcija ili rijetko ruptura papilarnog mišića).

Popuštanje srca može biti blago s kliničkim znakovima tek plućne staze u bazalnim partijama ili teško s plućnim edemom, hipotenzijom, slikom malog udarnog volumena sve do kardiogenog šoka. Težina popuštanja srca u AIM u izravnoj je vezi s veličinom i lokalizacijom infarkta i prethodnim oštećenjem srca (npr. već prethodno preboljeli srčani infarkt, šećerna bolest, hipertenzija). Popuštanje srca je odraz oštećenja sistoličke i dijastoličke funkcije miokarda. Zatajivanju srca mogu pridonijeti tahikardni ili bradikardni poremećaji ritma i mehaničke komplikacije AIM. Bolesnici starije životne dobi (>65 god.), a upravo su oni najzastupljeniji u AIM, češće razvijaju sliku popuštanja srca. Dijelom je to uzrokovano učestalijim komorbiditetom, restriktivnijom ("opreznijom") medikacijom i konzervativnijem pristupu toj grupi bolesnika (manje učinjenih primarnih perkutanih koronarnih intervencija).

Kardiogeni šok je najteža komplikacija AIM. U okviru epidemioloških ispitivanja, a prije upotrebe trombolize, dobro je poznata "Worcester comunity" prospektivna studija provedena u SAD u razdoblju od 1975. do 1988. godine pri čemu je nađeno da je učestalost kardiogenog šoka u bolesnika s akutnim srčanim infarktom iznosila 7,5% s vrlo visokom smrtnosti od 78%. Uvođenjem trombolize terapijski uspjesi bili su nažalost razočaravajući. Trombolitička terapija kod bolesnika koji su već razvili kardiogeni šok je ostala neuspješna što se objašnjava neučinkovitom koronarnom trombolizom zbog smanjenog perfuzijskog tlaka. Posljednih godina terapija izbora je primarna perkutana koronarna intervencija (PCI) koja je drastično smanjila smrtnost kardiogenog šoka. Brojni su preostali činioci koji determiniraju uspjeh primarne PCI; intervencija u visokovolumnom centru, koronarna bolest srca koja zahvaća više krvnih žila te starija životna dob. Izrazito je značajan pokazatelj dužina trajanja šoka, pri čemu je prognoza bolesnika kod kojih je intervencija učinjena unutar 6 sati od početka bolesti reducirala smrtnost na 43%, dok dužim trajanjem šoka progresivno raste smrtnost. Prognoza je infaustna ukoliko kardiogeni šok traje preko 18 sati. Uspjesi primarne PCI ovise o reperfuzijskim aritmijama sve do fibrilacije ventrikula ili ekscesivne bradikardije, ali i o primjeni inhibitora glikoproteina IIb/IIIa. Od 1988. godine u terapiji kardiogenog šoka počela se sve više koristiti mehanička potpora intra-aortne balon pumpe (IABP) i u SAD se spominje podatak od 450 primjena IABP mjesečno. Polazilo se od valjane pretpostavke da će se intermitentnim, tj.

Acute myocardial infarction (AMI) may be accompanied by complications. Some early complications are arrhythmias and conduction disturbances, failure of the left ventricle even including cardiogenic shock and mechanical complications (rupture of the free wall of the left ventricle, rupture of intraventricular septum and dysfunction or rarely rupture of the papillary muscles).

Heart failure may be slight with clinical signs of only pulmonary stasis in basal parties or serious with pulmonary edema, hypotension, the image of a slight stroke volume even including cardiogenic shock. The seriousness of heart failure in AMI is directly connected with the size and localization of infarction and previous heart damage (e.g. previous myocardial infarction, diabetes, hypertension). Heart failure is the reflection of damaged myocardium systolic and diastolic function. Heart failure may be caused by tachycardial and bradycardial rhythm disturbances and mechanical complications of AMI. Elderly patients (>65 aged) most commonly suffer from AMI, they more frequently develop signs of heart failure. It is partly caused by more frequent comorbidity, more restrictive ("better cautious") medications and more conservative approach to such group of patients (fewer primary percutaneous coronary interventions performed).

Cardiogenic shock is the most serious AMI complication. Within epidemiologic data and prior to use of thrombolysis, there is a well-known "Worcester community" prospective study conducted in the USA within the period between 1975-1988, when it was found out that the frequency of cardiogenic shock in patients with AMI amounted to 7.5% with a very high mortality rate of 78%. After having introduced thrombolysis, the therapy success was unfortunately disappointing. Thrombolytic therapy with the patients who have already developed cardiogenic shock has remained unsuccessful which is explained by inefficient coronary thrombolysis due to a reduced perfusion pressure. During the last few years, the choice therapy is the primary percutaneous coronary intervention (PCI) that dramatically reduced mortality caused by cardiogenic shock. There is a series of remaining factors that determine the success of primary PCI; intervention in high-volume center, multi-vessel coronary heart disease and old age. The duration of the shock is a highly important indicator whereas the prognosis of patients with whom the intervention performed within 6 hours since the onset of the disease reduced the mortality to 43%, while some longer duration of the shock progressively increases mortality. The prognosis is fatal if the cardiogenic shock lasts for more than 18 hours. The success of PCI depends on reperfusion arrhythmias including ventricular fibrillation or excessive bradycardia, but also on the use of glycoprotein inhibitor IIb/IIIa. Since 1988, the cardiogenic shock therapy started using mechanical support of intra-aorta balloon pumps (IABP) and in the USA there is information mentioned about the

dijastoličkim dizanjem tlaka u silaznoj aorti povećati perfuzijski tlak u koronarnim arterijama i tako stvoriti uvjeti za uspješnu trombolizu, ali i uvjeti za učinkovitiju mehaničku revaskularizaciju putem PCI, odnosno znatno rjeđu kiruršku revaskularizaciju miokarda.

Received: 10th Nov 2008
E-mail: vjeran.nikolic-heitzler@zg.htnet.hr

use of IABP for 450 times a month. The starting point was the assumption that the perfusion pressure in coronary arteries will be increased due to intermittent or diastolic increasing pressure in the descending aorta thereby creating conditions for efficient thrombolysis and conditions for efficient mechanical myocardium revascularization through PCI, or greatly less frequent surgical myocardium revascularization.