



Značaj vizuelne urgentne medicine u smanjenju „door to door time”

The importance of visual emergency medicine in reducing “door to door time”

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Apstrakt

Akutni infarkt miokarda, moždani udar i trauma, poslednjih decenija predstavljaju vodeće uzroke smrti, kako u svetu, tako i kod nas. Kako su vremenom zdravstvene ustanove postajale istovremeno i specijalizovani centri za STEMI, MU, politraumu i druga urgentna stanja, tako je ustanovljeno pravilo „zlatnog sata”; „door to puncture time” – vreme kraće od 90 minuta za endovaskularno lečenje MU, nastalog usled okluzije velikog krvnog suda; „door to balloon time” – vreme kraće od 90 minuta za pPCI kod STEMI, kao i druge vremenske ciljeve za različita hitna stanja. Efikasan tretman svakog od ovih urgentnih stanja je vremenski zavisna, tako da su brzo postavljanje dijagnoze, stabilizacija i transport pacijenta u što kraćem vremenskom periodu od ključnog značaja. Sprovedene su brojne studije koje su analizirale faktore koji doprinose skraćanju „door to door” vremena, a koje su pokazale da aktiviranje sale za kateterizaciju, odnosno osoblja specijalizovanog za zbrinjavanje određenog urgentnog stanja direktnim slanjem podataka, putem audio i video zapisa od strane ekipe HMP još dok je pacijent na putu do specijalizovanog zdravstvenog centra, značajno skraćuje vreme do ciljane intervencije i smanjuje stepen mortaliteta i morbiditeta. To se može postići implementiranjem standardizovanog sistema sa video komunikacijom između dispečerskog centra i ekipe na terenu, lica koja pozivaju dispečerski centar u cilju pružanja hitne medicinske pomoći, kao i urgentnog centra ili drugih celina u okviru zdravstvenih ustanova koje treba angažovati u slučaju potrebe, uz mogućnost prebacivanja tekuće video komunikacije sa ekipama ili pacijentima na ove celine. Da bi se ovi zahtevi ostvarili, potrebno je da i zdravstvene ustanove i pacijenti zadovoljavaju određene telekomunikacione, hardverske i softverske uslove.

Ovaj kurs ima za cilj obučavanje medicinskih radnika, pre svega lekara zaposlenih u različitim službama, o uspostavljanju međusobne video komunikacije i prenosa podataka u realnom vremenu između ovih ustanova, kako bi se omogućio „konzilijarni pregled” pacijenta pre njegovog pristizanja u tercijarnu zdravstvenu ustanovu, što bi dovelo do značajnog skraćivanja „door to door” vremena i optimalizovanja ishoda lečenja. Pored STEMI mreže, plan je da se formira STROKE mreža, TRAUMA mreža, ARREST mreža i ULTRAZVUK mreža. Ultrazvuk koristimo podjednako u svim fazama reanimacije, pre nego što dođe do srčanog zastoja, tokom same kardiopulmonalne reanimacije, kao i u periodu nakon toga. Pre sprovedenih reanimacionih mera, ultrazvuk možemo primeniti kod pacijenata bez svesti, sa bolom u grudima i/ili sumnjom na AKS, kod hipotenzivnih, dispoičnih pacijenata sa cijanozom, politraumatizovanih, za ultrazvučnu procenu tupe traume abdomena – „fast protokol” i kod jatrogenih komplikacija. U toku same CPR, ultrazvukom možemo da potvrdimo PEA ili asistoliju, sumnju na tamponadu perikarda, efektivnost kompresija i ROSC. Takođe, uz pomoć ultrazvuka mogu se izvesti intervencije kao perikardiocenteza i pleuralna punkcija.

Abstract

Acute myocardial infarction, stroke, and trauma, in recent decades, are the leading causes of death both in the world and in our country. As health care institutions became specialized centers for STEMI, stroke, polytrauma, and other emergencies at the same time, the rule of the “golden hour” was established; “Door to puncture time” - time shorter than 90 minutes for endovascular treatment of stroke caused by occlusion of a large blood vessel; “Door to balloon time” - a time less than 90 minutes for PCI in STEMI, as well as other time targets for various emergencies. Effective treatment of each of these emergencies is time-dependent, so rapid diagnosis, stabilization, and transportation of the patient in the shortest possible time are crucial. Numerous studies have been conducted that analyzed the factors that contribute to shortening the “door to door” time, which showed that the activation of the catheterization room, or staff specializing in emergency care by sending data directly, via audio and video by the HMP team while is a patient on the way to a specialized health center, significantly shortens the time to targeted intervention and reduces mortality and morbidity. This can be achieved by implementing a standardized system with video communication between the dispatch center and field teams, persons calling the dispatch center to provide emergency medical care, as well as an emergency center or other units within health facilities to be engaged if necessary, with the possibility switching ongoing video communication with teams or patients to these units. In order to meet these requirements, it is necessary that both health care institutions and patients meet certain telecommunication, hardware, and software requirements. This course aims to train medical workers, primarily doctors employed in various services, to establish mutual video communication and real-time data transfer between these institutions in order to enable “consultation” of the patient before his arrival in a tertiary health institution, which would lead to significantly shorten the “door to door” time and optimize treatment outcomes. In addition to the STEMI network, the plan is to form a STROKE network, a TRAUMA network, an ARREST network, and an ULTRASOUND network. We use ultrasound equally in all phases of resuscitation, before cardiac arrest occurs, during cardiopulmonary resuscitation as well as in the period after that. Prior to resuscitation measures, ultrasound can be used in unconscious patients with chest pain and/or suspected ACS, in hypotensive, dyspnoeic patients with cyanosis, polytraumatized, for ultrasound assessment of blunt abdominal trauma - “fast protocol” and in iatrogenic complications. During CPR itself, ultrasound can confirm PEA or asystole, suspicion of pericardial tamponade, compression effectiveness, and ROSC. Interventions such as pericardiocentesis and pleural puncture can also be reported with the help of ultrasound.

