



# Kardiopulmocerebralna reanimacija odraslih – pristup pacijentu u bolničkim uslovima

## Cardiopulmocerebral resuscitation (CPR) in adults – the approach to a patient in hospital conditions

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### Apstrakt

**Uvod:** Kardiopulmocerebralna reanimacija (KPCR) je skup mera i postupaka koje preduzimamo kada pacijent ne diše i/ili nema srčanu radnju. Najvažnije je rano prepoznavanje potrebe za KPCR-om i započinjanje intenzivnih mera po protokolima i standardima.

**Cilj:** Sagledavanje najnovijih preporuka za kardiopulmocerebralnu reanimaciju iz februara 2015. godine sa ciljem obnavljanja veština i znanja iz ove oblasti.

**Metoda rada:** Retrospektivna analiza literature i kliničko iskustvo tokom svakodnevnog rada. Glavni pojmovi pretrage: kardiopulmocerebralna reanimacija, jedinica intenzivnog lečenja, bolnički pacijenti, odrasli pacijenti. Pretraga obavljena kroz PubMed, Medline i elektronske časopise dostupne na KOBSON-u.

**Rezultati:** Kada se govori o pristupu pacijentu u bolničkim uslovima i primeni adekvatnih mera reanimacije, neophodno je preduzimanje mera od strane prisutnog osoblja sa pozivanjem tima za reanimaciju i davanje adekvatnih podataka vodi tima koji daje smernice do pristizanja tima do pacijenta. Takođe mora se napomenuti da kada se pacijent sa terena dovozi u bolnicu pod merama reanimacije neophodno je davanje najavljuvanje pacijenta reanimacionom timu i davanje adekvatnih podataka radi pripreme uslova za nastavak mera reanimacije.

U bolničkim uslovima mere BLS (basic life support) se ne mogu jasno odvojiti od mera ALS (advance life support) ali i ovde je osnov što kraće vreme za preduzimanje neophodnih mera reanimacije. Iz ovog razloga težnja treba biti na stalnom obnavljanju postojećih znanja, na standardizovanju protokola i smernica reanimacije prema svetskim standardima za celu bolnicu i svako odeljenje u bolnici, sadržaj lekova, opreme za reanimaciju kao i njihovo mesto moraju biti jasno određeni i definisani i svakodnevno proveravani i kontrolisani.

Na procenu opšteg stanja pacijenta ne treba biti utrošeno više od 10sec, primarni znaci akutnog srčanog zastoja su: gubitak svesti, prestanak spontanog disanja, prestanak cirkulacije tj. izostanak pulsa nad magistralnim krvnim sudovima. Najvažnije je poštovanje AREST VREMENA – vreme koje prolazi od nastupanja srčanog zastoja do preduzimanja mera reanimacije. Nakon 3-5 minuta od nastupanja srčanog zastoja dolazi do nepovratnog (ireverzibilnog) oštećenja moždanih ćelija.

Mere reanimacije i redosled postupaka radi lakšeg pamćenja definišu se sledećom mnemotehničkom formulom CAB DEF GHI prema najnovijim smernicama i protokolima. Značenje svakog pojedinačnog obeležja je sledeće: C (circulation),

### Abstract

**Introduction:** Cardiopulmocerebral resuscitation (CPR) is a set of measures and procedures that we take when the patient is not breathing or their heart stops beating. The most important is the early recognition of the need for CPR and the initiation of intensive measures according to protocols and standards.

**Aims:** The review of new recommendations for cardiopulmocerebral resuscitation from February 2015 with the aim of renewing skills and knowledge in this particular area.

**Methods:** Retrospective analysis of literature and clinical experience during everyday work. Main search terms: cardiopulmocerebral resuscitation, intensive care unit, hospital patients, adult patients. Search is done through PubMed, Medline, and e-magazines available on KOBSON.

**Results:** When it comes to access to the patient in a hospital setting and application of adequate resuscitation measures, the present staff must take measures by calling the resuscitation team and provide adequate information to the team leader who provides guidance until the team arrives at the patient. It must also be noted that when a patient is brought from the field to the hospital under resuscitation measures, it is necessary to announce the patient to the resuscitation team and provide adequate data to prepare the conditions for the continuation of resuscitation measures. In hospital conditions, the BLS measures (basic life support) cannot be clearly separated from the ALS measures (advance life support), but even here the basis is the shortest possible time to take the necessary resuscitation measures. For this reason, it is necessary to constantly update the existing knowledge, to standardize resuscitation protocols and guidelines according to world standards for the entire hospital and each ward in the hospital, medications, resuscitation equipment, and their place must be clearly defined and daily controlled.

No more than 10 seconds should be spent on the assessment of the general condition of the patient, the primary signs of acute cardiac arrest are the loss of consciousness, the cessation of spontaneous breathing, the cessation of circulation - ie., the absence of pulse over the main blood vessels. The most important thing is to respect arrest time - the time that passes from the onset of cardiac arrest to taking resuscitation measures. After 3-5 minutes from the onset of cardiac arrest, there is irreversible damage to brain cells. The resuscitation measures and the sequence of procedures for easier memory are defined by the following mnemonic formula CAB DEF GHI according to the latest guidelines and protocols. The meaning of each individual feature is as follows: C (circulation), A (airway), B (breathing),

A (airway), B (breathing), D (drugs and fluid), E (EKG), F (fibrillation), GHI (GCS, High mental activity, intensive care).

*Zaključak:* Poznavanje mera reanimacije od strane zdravstvenih radnika uz stalnu edukaciju i praćenje novina osnov su uspešnog rada. Ističemo značaj obaveznog poznavanja postojeće opreme, mesta gde se ista nalazi i načina upotrebe sa akcentom na značaj rane defibrilacije tj mesta gde je defibrilator, obučivosti za korišćenje i stalne provere ispravnosti aparata.

D (drugs and fluid), E (ECG), F (fibrillation), GHI (GCS, High mental activity, intensive care).

*Conclusion:* Knowing resuscitation measures by health workers with constant education and monitoring of innovations is the basis of successful work. We emphasize the importance of mandatory knowledge of the existing equipment, the place where it is located, and the method of use with an emphasis on the importance of early defibrillation - ie. the place where the defibrillator is, training for use and constant checking of the correctness of the device.