

# Terapijska hipotermija kod bolesnika nakon kardiopulmonalnog aresta i reanimacije

## Therapeutic hypothermia after cardiopulmonary arrest and reanimation

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**Uvod:** Prema smjernicama Europskog vijeća za reanimatologiju iz 2010. godine hipotermija se preporuča u odraslih komatoznih bolesnika nakon kardiopulmonalnog aresta. Propisuje se korištenje invazivnih i neinvazivnih metoda sistemskog pothlađivanja, a u toku hipotermije može se pristupiti i drugim terapijskim postupcima poput perkutane koronarne intervencije u svrhu što optimalnijeg terapijskog učinka za pacijenta.<sup>1,2</sup> Prema smjernicama Europskog vijeća za reanimatologiju iz 2015. godine i dalje se preporučuje ciljana kontrola temperature, sada nastojeći postići 36°C, za razliku od prethodno preporučena 32–34°C.<sup>3</sup> Najnovija istraživanja iz 2021. godine su pokazala da terapijska hipotermija ne smanjuje smrtnost, te nema značajne razlike između hipotermije i normotermije.<sup>4</sup>

**Prikaz slučaja:** Pacijent star 40 godina izgubio svijest i doživio arest na poslu. Započeta je laička reanimacija te je pozvana Hitna medicinska pomoć. Inicijalni ritam u EKG je bila ventrikulska fibrilacija, te je defibriliran u jednom navratu, nakon čega nastupa električna aktivnost bez pulsa. Nastavljen je reanimacijski postupak uz primjenu tri ampule adrenalina na što je postignut povratak spontane cirkulacije. Po dolasku u Koronarnu jedinicu bolesnik je intubiran, mehanički ventiliran, sediran i miorelaksiran. Hemodinamski i ritmološki stabilno. Provedena je terapijska hipotermija, te nakon toga oporavlja svijest i uspješno je ekstubiran i odvojen od mehaničke ventilacije. Bolesniku je indicirana ugradnja implantabilnog kardioverter defibrilatora u svrhu sekundarne prevencije nagle srčane smrti.

**Zaključak:** Pravodobna i uspješna reanimacija nakon kardiopulmonalnog aresta preduvjet je za oporavak bolesnika i njegov povratak u samostalan život. S obzirom na učestalost kardiopulmonalnih aresta, najčešće se pojavljuju u izvanbolničkim uvjetima stoga ishod daljnjeg liječenja i oporavka ovisi o pravovremenom pronalaženju osobe, prepoznavanju stanja, pravilnoj izvedbi laičke reanimacije, uporabi javno dostupnih automatskih vanjskih defibrilatora te o brzini transporta u bolničku ustanovu.<sup>2</sup>

**Introduction:** According to the guidelines of the European Council for Resuscitation from 2010, hypothermia is recommended in adult comatose patients after cardiopulmonary arrest. The use of invasive and non-invasive methods of systemic hypothermia is prescribed, and during hypothermia other therapeutic procedures such as percutaneous coronary intervention can be approached in order to maximize the optimal therapeutic effect for the patient.<sup>1,2</sup> According to the guidelines of the European Council for Resuscitation from 2015, targeted temperature control is still recommended, now striving to reach 36°C, as opposed to the previously recommended 32–34°C.<sup>3</sup> Recent research from 2021 has shown that therapeutic hypothermia does not reduce mortality, and there is no significant difference between hypothermia and normothermy.<sup>4</sup>

**Case report:** 40-year-old patient lost consciousness and was arrested at work. Lay resuscitation was started, and the Emergency Medical Service was called. The initial rhythm in the ECG was ventricular fibrillation, and he was defibrillated on one occasion, followed by pulseless electrical activity. The resuscitation procedure was continued with the use of three ampoules of adrenaline, to which return of spontaneous circulation was achieved. Upon arrival at the Coronary Care Unit, the patient was intubated, mechanically ventilated, sedated, and muscle relaxed. Hemodynamically and rhythmically stable. Therapeutic hypothermia was performed, after which he recovered consciousness and was successfully extubated and separated from mechanical ventilation. The patient was indicated for the installation of an implantable cardioverter defibrillator for the purpose of secondary prevention of sudden cardiac death.

**Conclusion:** Timely and successful resuscitation after cardiopulmonary arrest is a prerequisite for the patient's recovery and his return to independent living. Given the frequency of cardiopulmonary arrests, they most often occur in outpatient settings, so the outcome of further treatment and recovery depends on timely finding the victim, recognizing the condition, proper performance of lay resuscitation, use of publicly available automated external defibrillators and pace of hospitalization.<sup>2</sup>

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