

Therapeutic hypothermia in out-of-hospital cardiac arrest patients is included in the European Resuscitation Council Advanced Life Support Algorithm 2010 for treatment of post-cardiac-arrest-syndrome

Janusz Andres, MD, PhD, FERC

Chair and Department of Anaesthesiology and Intensive Therapy, Jagiellonian University Hospital, Krakow, Poland



The 2010 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations document stated: "Adult patients who are comatose (not responding in a meaningful way to verbal commands) with spontaneous circulation after out-of-hospital VF cardiac arrest should be

cooled to 32–34°C for 12–24 h. Induced hypothermia might also benefit comatose adult patient with spontaneous circulation after OHCA from a nonshockable rhythm or in-hospital cardiac arrest" [1]. This is the reason why the European Resuscitation Council Resuscitation Guidelines 2010 (www.erc.edu, Polish version available on www.prc.krakow.pl) recommend temperature control and therapeutic hypothermia in the immediate post cardiac arrest treatment according to Advanced Life Support Cardiac Arrest Algorithm [2]. The main reason for cooling the patients after cardiac arrest is the possibility of significant improvement in neurological outcome as has been shown for the first time in the HACA study in 2002 [3] and many recent publications. Neurologically intact survival after cardiac arrest is the main goal of resuscitation and should be reported in all studies on resuscitation on humans. Hypothermia decreases the cerebral oxygen consumption and suppresses many pathological pathways leading to the injury of the brain. Although there are multiple internal (endovascular) and external (surface cooling) methods for inducing therapeutic hypothermia after cardiac arrest, at present there are no data showing that any specific cooling technique in-

creases survival. However, internal devices enable more precise temperature control compared with external techniques [4], as has been also nicely shown by Knapik et al. [5] in the paper published in this issue of *Kardiologia Polska*. Authors were able to confirm in the prospective study on 41 patients that intravascular cooling provides more precise temperature control in comparison with traditional, external cooling technique. Despite the lack of the outcome data, what is the serious limitation of this study, Knapik et al. [5] presented an interesting paper describing in details two methods of therapeutic hypothermia used in the complex treatment of patients with post-cardiac arrest syndrome. We shall do our best to monitor and improve patient survival after out-of-hospital cardiac arrest in Poland.

Conflict of interest: none declared

References

1. 2010 International Consensus on Cardiopulmonary Resuscitation and Emergency Cardiovascular Care Science with Treatment Recommendations. Executive summary. *Resuscitation*, 2010; 81S: e1–e25.
2. Deakin ChD, Nolan JP, Soar J et al. Adult advanced life support. *Resuscitation*, 2010; 81: 1305–1352.
3. HACA. Hypothermia After Cardiac Arrest Study Group. Mild therapeutic hypothermia to improve the neurologic outcome after cardiac arrest. *NEJM*, 2002; 346: 549–556.
4. Hoedemaekers CW, Ezzahti M, Gerritsen A, van der Hoeven JG. Comparison of cooling methods to induce and maintain normo- and hypothermia in intensive care unit patients: a prospective intervention study. *Crit Care*, 2007; 11: R91.
5. Knapik P, Rychlik W, Siedy J, Nadziakiewicz P, Cieśla D. Comparison of intravascular and conventional hypothermia after cardiac arrest. *Kardiol Pol*, 2011, 69: 1157–1163.