

### Can utilization of therapeutic hypothermia with cold saline infusion and external cooling be increased in Turkey?

Dear Editor,

We have recently read with great interest the manuscript by Aruğaslan et al. describing experience with mild therapeutic hypothermia in patients with cardiac arrest complicating ST elevation myocardial infarction.<sup>[1]</sup> Thanks are due to the authors for sharing their valuable experience with mild therapeutic hypothermia in the comatose patient group.

The authors reported that 1 patient died of cardiogenic shock, 1 died of neurologic sequel, and that those remaining survived without sequel for 1 year. The cohort consisted of patients with ST elevation myocardial infarction, with 7 cases of out-of-hospital cardiac arrest. Cardiopulmonary resuscitation duration was longer than 20 minutes in 69% of patients, and longer than 50 minutes in 30% of patients. Time to resuscitation and ratio of witnessed:unwitnessed cardiac arrests were not reported. The excellent rate of survival without neurological sequel reported raises questions regarding study enrollment. The first question concerns patient age, which was relatively young. A review of the literature demonstrated an average population nearly 20 years older than that of the present study.<sup>[2]</sup> The second question concerns lack of reported time to resuscitation. The results seem to imply that early defibrillation and resuscitation began within minutes of cardiac arrest, otherwise, the excellent neurologic outcomes could not have been achieved. However, data reported elsewhere describes relatively low early resuscitation rates, even when cardiac arrest was witnessed.<sup>[2]</sup> The concerns raised here indicate pos-

sible selection bias during the enrollment phase of the study, during which young patients with very early ( $\leq 3$  minutes) resuscitation may have been recruited.

In our coronary care unit, therapeutic hypothermia has been administered to all cardiac arrest patients since 2011.<sup>[3]</sup> Intravascular heat exchange device is not used for cooling. No reported data has indicated that any specific cooling method increases survival compared to other methods. The cooling method presently used incorporates cold intravenous fluid infusion with external cooling achieved with simple ice packs. This is an inexpensive, easily accessible, and adequate method of temperature control. We believe that familiarity and experience with this method may result in widespread utilization of therapeutic hypothermia in our country.

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#### References

1. Aruğaslan E, Karaca M, Özcan KS, Zengin A, Tatlısu MA, Bozbeyoğlu E, et al. Neurologic outcome in patients with cardiac arrest complicating ST elevation myocardial infarction treated by mild therapeutic hypothermia: The experience of a tertiary institution. *Turk Kardiyol Dern Ars* 2016;44:100–4.
2. Pleskot M, Hazukova R, Stritecka H, Cermakova E, Pudil R. Long-term prognosis after out-of-hospital cardiac arrest with/without ST elevation myocardial infarction. *Resuscitation* 2009;80:795–804. [Crossref](#)
3. Örnek E, Mansuroğlu C, Çetin M, Balun A, Kızıltunç E, Örnek D, et al. Therapeutic Hypothermia in Cardiac Arrest Patients Undergoing Primary Coronary Intervention. *Am J Cardiol* 2015;115(Suppl):36. [Crossref](#)

### Authors reply

Dear Editor,

We would like to thank the authors for their interest in our study.<sup>[1]</sup> Patients with unwitnessed cardiac arrest were not included. Information regarding time to defibrillation and resuscitation from hospital and emergency service records was not available for all patients. The relatively young patient population and

the enrollment of in-hospital arrest patients were discussed as factors contributive to good neurologic recovery. Further studies with larger sample sizes are needed to increase support for therapeutic hypothermia in our country.

The importance of avoiding fluctuations during therapeutic hypothermia has been emphasized in recent guidelines. Implementation of the external method using simple, cost-effective ice packs may result in temperature fluctuations and uncontrolled rewarming.