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Letter to the Editor

Reply to: 'The importance of pre-hospital interventions for prevention and management of witnessed hypothermic cardiac arrest'



Sir,

We want to thank Dr Strapazzon et al. for their comments on our article "Clinical characteristics and outcomes of witnessed hypothermic cardiac arrest: A systematic review on rescue collapse", recently published in *Resuscitation*.¹ We would like to bring some additional insights regarding issues pointed out in their letter.²

A first comment pertains to the notion of rescue collapse itself. The definition we used for our research was that of Boue et al.³ who defined rescue collapse as "the occurrence of CA relating to the extrication or transfer of a patient suffering from profound hypothermia". We therefore included patients who sustained a "witnessed cardiac arrest that was thought to be due to hypothermia". Strapazzon et al. referred to notions frequently heard about hypothermia and CA, i.e. "rescue collapse", "rescue death", "circum rescue collapse", "afterdrop", "CA trigger". The exact definitions of these notions may however not be very clear, and their clinical implications sometimes debated. Standardised and, ideally, pragmatic definitions are needed. This is not only important for research purposes, but also for clinicians to be able to understand and evaluate the external validity of our findings. We therefore advocate the future use of the term "rescue collapse" for witnessed CA in the context of accidental hypothermia. Other potential CA triggering factors in particular circumstances (e.g. water immersion) may lead to confusion and are not part and parcel of the concept of rescue collapse.

Second, as underlined by Strapazzon et al. a substantial proportion of patients in our study had asystole as the initial cardiac rhythm. This was deemed unexpected by Strapazzon et al. who pointed out that ventricular fibrillation was "traditionally" thought to be the initial rhythm in hypothermic CA. Despite our study's limitations, our results challenged this traditional concept and bring new evidence regarding the clinical presentation of hypothermic CA. Our findings are also similar than recent animal and human studies on this topic.⁴ This may be especially important as CA rhythm was historically a decision-making factor. Interestingly, it was not identified as a predictor in the recently published HOPE score and should probably be abandoned, to avoid undertreatment of hypothermic CA patients with asystole.⁵

Our main goal was to study the relationship between CA arrest risk and temperature, and to enhance the evidence level regarding the temperature at which hypothermic CA may occur. As suggested by Strapazzon et al. we agree that efforts should be

pursued to promote the good management of these unfrequent cases, from the prehospital phase, to hospital orientation and hospital triage.

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Conflicts of interest

None

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