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Prognostication of neurologic outcome after cardiac arrest: standardization of neurological examination conditions is needed

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Dear Editor,

We read with great interest the study by Kamps and colleagues [1] in the October 2013 issue of *Intensive Care Medicine*. Accurate neurological prognostication in comatose patients after cardiac arrest is a daily concern in general ICUs [2], especially the effect of therapeutic hypothermia on prognostication accuracy [3]. The authors should be congratulated for their tenacity in obtaining original data from the authors of all the studies included in the meta-analysis.

We were nevertheless specifically intrigued by the overall high false positive rate (FPR) of bilaterally absent cornea reflexes. In the aggregated data analysis, seven patients with bilateral cornea reflex absence ultimately had a favorable recovery. The study by Bisschops and colleagues [4], in which neurological signs were retrospectively recorded, accounts for a majority of these patients (four patients, of nine patients with a favorable recovery)

with a FPR of 45 %. The exclusion of this study from the meta analysis might have revealed very different results, as only the six studies with neurological signs recorded prospectively would have been taken into account.

More generally, the study by Kamps and colleagues [1] raises important issues on whether neurological signs, such as absence of motor response or cornea reflexes, intrinsically are poorly reliable for predicting neurological recovery after cardiac arrest (and are thus unsuitable in this setting). Discrepancies between study results in the meta-analysis by Kamps and colleagues [1] might at least partly reflect large discrepancies in daily practice, in terms of assessment methods of brainstem reflexes, timing of neurological examination after rewarming from hypothermia, and ruling out of potential insidious confounders (such as persistent effect of sedatives or morphinics). Standardization of neurological examination conditions after cardiac arrest is urgently needed to answer this question.

Conflicts of interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

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