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Letter to the Editor

Reply to: 'Cardiac arrest and breathing, why bother?' Because it's too late if we wait for a definitive diagnosis



Dr Judenherc-Haouzi highlights [1] an important point in relation to our paper on the linguistic factors that influence call-taker recognition of agonal breathing [2] – that there is no breathing pattern specific to cardiac arrest. We completely agree with this point. Dr Judenherc-Haouzi then proposes, on the basis of this non-specificity, that using breathing in a dispatch protocol in order to recognise cardiac arrest (and initiation of dispatch-assisted CPR instructions) during the emergency phone call, has no warranty. On this point we respectfully disagree.

Ideally, it would be possible to apply a reliable diagnostic test at the time of the emergency call, that has both high sensitivity and high specificity for cardiac arrest. Unfortunately, in the context of lay callers, this is currently not practical. Instead, ambulance dispatch systems around the world err on the side of caution by treating the combination of (a) lack of consciousness, and (b) abnormal breathing (or complete absence of breathing) as suspected cardiac arrest, and therefore the basis for CPR instructions [3–5]. This precautionary approach favours sensitivity to detect cardiac arrest at the cost of specificity. Clearly, doing so means that some patients will receive CPR when they do not need it. However, the risks to such patients have been shown to be generally low (uncommon, and rarely life-threatening – e.g. fractured ribs). Furthermore, in many instances it may become rapidly clear that the patient is not in cardiac arrest due to their reaction to being given CPR.

Not recommending CPR instructions for patients with suspected cardiac arrest risks costing lives. Given that ambulance response times for cardiac arrest are typically 5–15 min, and that survival from cardiac arrest decreases by up to 10% with every minute without resuscitation, bystander CPR in the period before the ambulance arrives has a major impact on improved patient survival. Thus, quite literally, there is no time to wait for a definitive diagnosis that is only possible from paramedics and other medical professionals.

Dr Judenherc-Haouzi argues that, with our analysis, it was not possible to identify with certainty the individual calls in which agonal breathing was really occurring. We agree. It is important to clarify that the aim of our paper was not to retrospectively determine which patients truly had agonal breathing, but to examine how call-takers responded to what callers said when they described the breathing of cardiac arrest patients. Our results are important in showing that callers commonly described breathing as a qualified *yes*-answer (e.g. “*yes but gasping*”), and while many of these answers were consistent with agonal breathing, they were nearly always (94% of qualified *yes*-answers) categorised by call-takers as breathing. Given that ambulance dispatch systems around the world treat abnormal breathing (in combination with unconsciousness) as suspected, albeit not confirmed cardiac arrest, it is important to understand how callers actually describe breathing and how call-takers respond to that. We hope our paper makes a valuable contribution in this regard.

Conflict of interest declaration

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