Letter

Evidence–lost to tight glycemic control?

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In recent years, the field of intensive care medicine has had the benefit of learning from two randomized controlled trials that tight glycemic control (TGC) is beneficial to critically ill patients [1,2]. No benefit was found by two other clinical trials, however, hampering implementation of TGC in daily practice [3,4]. The question arises of whether the intensive care community interprets the results of these later trials in the correct way. What are the alternative explanations for why two trials do show beneficial effects while two other trials do not, apart from the possibility that TGC may indeed not benefit critically ill patients?

The authors of the recently published trial recognize several shortcomings of their study [4]. Indeed, De la Rosa and colleagues observed a large variability of blood glucose levels in their study. This study may therefore simply have been underpowered to show any beneficial effect of TGC. Apart from this concern, two issues pertain to the comparability of the studies.

First, the delay in recruitment, much longer than in the original studies [1,2], may also explain their findings as it is possible that any benefit of TGC can be accrued only early on.

Second, we would like to identify the crucial issue of the insulin dosing in the control group. An increasing number of patients in the control groups of the first three trials were receiving insulin, from 39% in the first trial [1] to 70% and 74% in the second trial and third trial, respectively [2,3]. This difference may explain the decrease in relative benefit of TGC with each consecutive trial: while the first trial showed a mortality reduction with TGC in all patients [1], improved survival was only found in patients with a prolonged length of stay in the second trial [2], while no beneficial effect at all was seen in the last trial [3]. In the recently published trial of De la Rosa and colleagues, 47% of patients in the control group received insulin [4]. This finding not only illustrates nicely that (some sort of) glycemic control already found its way into daily care during conduct of the newer studies, but may also have diluted the beneficial effect of TGC.

If we agree that evidence-based medicine seeks to apply judgments about the quality of evidence, the evidence that derives from confirmation trials should be properly judged too, as in the initial studies – otherwise we may gamble the real evidence, with a potential setback in the quality of care.

Competing interests

The authors declare that they have no competing interests.

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TGC = tight glycemic control.

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