

LETTER

# Safety of dexmedetomidine sedation in postoperative cardiac surgery patients

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In a meta-analysis regarding efficacy and safety of dexmedetomidine sedation in postoperative cardiac surgery patients [1], Lin and colleagues' conclusion that dexmedetomidine may decrease the risk of hyperglycemia is questionable. In their meta-analysis of hyperglycemia in Figure 3 of their report, three articles regarding the use of dexmedetomidine sedation after cardiac surgery are cited [2-4]. In the study of Abd Aziz and colleagues [2], however, postoperative glucose level was not assessed as an end point. Shehabi and colleagues [3] showed that incidence of hyperglycemia (blood sugar level >10 mmol/L) was not significantly different between dexmedetomidine and morphine groups (36.8% versus 47.6%,  $P = 0.062$ ). Herr and colleagues [4] demonstrated that the incidence of treatment-emergent hyperglycemia reaction was similar between dexmedetomidine and propofol groups (3% versus 3%,  $P = 0.750$ ). Furthermore, a recent meta-analysis indicates that dexmedetomidine does not decrease risk of hyperglycemia compared with the traditional sedative and analgesic agents in critically ill adult patients [5]. Thus, we are concerned about this incorrect conclusion of Lin and colleagues on the effect of dexmedetomidine on blood glucose level.

Actually, there is evidence in the literature indicating that dexmedetomidine can induce hyperglycemia, mediated via postsynaptic  $\alpha_2$  adrenoreceptors located on pancreatic  $\beta$  cells with a reduction of insulin secretion [6,7]. Even clinical studies show that dexmedetomidine can increase blood glucose level during minimally invasive video gynecologic surgical procedures [8] and cause hypoinsulinemia in postoperative patients needing sedation in the intensive care unit [9]. Thus, the effect of dexmedetomidine on perioperative blood glucose is rather complex and the currently available data from meta-analyses of dexmedetomidine studies have not

addressed this issue. We argue that further large randomized controlled trials are needed to obtain conclusive evidence and for determining the best choice among different therapeutic options.

#### Competing interests

The authors declare that they have no competing interests.

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