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Effect of perioperative systemic α2 agonists on postoperative morphine consumption and pain intensity: systematic review and meta-analysis of randomized controlled trials.

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Author information

Abstract

BACKGROUND: Systemic α2 agonists are believed to reduce pain and opioid requirements after surgery, thus decreasing the incidence of opioid-related adverse effects, including hyperalgesia.

METHODS: The authors searched for randomized placebo-controlled trials testing systemic α2 agonists administrated in surgical patients and reporting on postoperative cumulative opioid consumption and/or pain intensity. Meta-analyses were performed when data from 5 or more trials and/or 100 or more patients could be combined.

RESULTS: Thirty studies (1,792 patients, 933 received clonidine or dexmedetomidine) were included. There was evidence of postoperative morphine-sparing at 24 h; the weighted mean difference was -4.1 mg (95% confidence interval, -6.0 to -2.2) with clonidine and -14.5 mg (-22.1 to -6.8) with dexmedetomidine. There was also evidence of a decrease in pain intensity at 24 h; the weighted mean difference was -0.7 cm (-1.2 to -0.1) on a 10-cm visual analog scale with clonidine and -0.6 cm (-0.9 to -0.2) with dexmedetomidine. The incidence of early nausea was decreased with both (number needed to treat, approximately nine). Clonidine increased the risk of intraoperative (number needed to harm, approximately nine) and postoperative hypotension (number needed to harm, 20). Dexmedetomidine increased the risk of postoperative bradycardia (number needed to harm, three). Recovery times were not prolonged. No trial reported on chronic pain or hyperalgesia.

CONCLUSIONS: Perioperative systemic α2 agonists decrease postoperative opioid consumption, pain intensity, and nausea. Recovery times are not prolonged. Common adverse effects are bradycardia and arterial hypotension. The impact of α2 agonists on chronic pain or hyperalgesia remains unclear because valid data are lacking.

Comment in

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