

Long-term dexmedetomidine use and safety profile among critically ill children and neonates.

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Abstract

OBJECTIVE:

To determine whether long-term dexmedetomidine dosing is associated with lower opioid and benzodiazepine use without risk of significant hemodynamic changes and/or withdrawal.

DESIGN:

Retrospective, observational study.

SETTING:

PICU, cardiovascular ICU, and neonatal ICU in a single, tertiary care, academic children's hospital.

SUBJECTS:

We included all patients less than or equal to 21 years old, who received dexmedetomidine for greater than or equal to 72 hours from December 2008 to December 2010 resulting in a 98-subject cohort.

INTERVENTIONS:

None.

MEASUREMENT AND MAIN RESULTS:

The median duration of dexmedetomidine use was 141 hours. A decrease in systolic blood pressure and heart rate was seen after initiation of dexmedetomidine. After dexmedetomidine was discontinued, systolic blood pressure was statistically significantly higher than baseline. Similarly, heart rate showed a significant increase from baseline following discontinuation of dexmedetomidine. Starting dexmedetomidine was not associated with a significant difference in the dosing of opiates or benzodiazepines. Comfort scores were significantly lower at 2 and 72 hours of dexmedetomidine infusion. After stopping dexmedetomidine, the comfort score for patients at 1 hour was statistically higher than for patients at cessation of the infusion. Thirty percent of patients who were taken off dexmedetomidine, whether weaned or abruptly stopped, had withdrawal symptoms and scores recorded with agitation, tremor, and decreased sleep being most prominent.

CONCLUSIONS:

Hemodynamic effects of dexmedetomidine did not limit long-term use in this diverse population. After the addition of dexmedetomidine, opioid and benzodiazepine doses did not significantly escalate, and patients were more comfortable as evidenced by decreasing comfort scores.

Withdrawal from dexmedetomidine may be an issue and manifests as agitation, tremors, and decreased sleep.

Comment in Long-term dexmedetomidine use for pediatric critical care sedation: no need to sleep on it. [Pediatr Crit Care Med. 2014]

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