

THE PRACTICE OF USING DEXMEDETOMIDINE IN A PAEDIATRIC INTENSIVE CARE UNIT: RETROSPECTIVE CHART REVIEW

Almutairi, Diana Pharm.D, Jeraisy, Majed Pharm.D, MSc.

**Background:** Dexmedetomidine is a selective  $\alpha_2$  adrenergic agonist, it was approved by USFDA in December 1999 to be used initially for sedation in adults who are intubated and mechanically ventilated. Manufacturer recommends duration of infusion not to exceed 24 hours. There are limited data on its use in children.

The aim of this study is to describe the use of dexmedetomidine for sedation in the Pediatric Intensive Care Unit (PICU) in regards to the dose, duration of infusion, effect on heart rate (HR) and systolic blood pressure (SBP).

**Methods:** The study was conducted at the PICU. We did retrospective charts review for all children less than 14 years admitted to between May 2014 and April 2015 who received dexmedetomidine. Demographic data, HR, SBP, starting and maximum dose, time and duration of infusion and the concurrent use of midazolam were collected. IRB approval was obtained with a waiver of the informed consent.

**Results:** A total of 65 children with a median age of 24(1 to156) months, weight of 11( 2.3 to 90) kg. The reason of admission was 64.6% for medical indications and 35.4% for surgical indications. The starting dose was 0.48 mcg/kg/hr (0.25-1 mcg/kg/hr), and the maximum maintenance dose reached is 0.84 mcg/kg/hr (0.4-1.5 mcg/kg/hr). For the duration of infusion, the mean was 7.30 days (1-34 days), and there was 2 patients reached 60 and 63 days of dexmedetomidine infusion. There was no significant difference in duration of infusion with respect to age group ( $P=0.082$ ). There was a significant decrease in HR ( $P= <0.0001$ ), baseline  $114.23 \pm 22.08$  bpm, and post-infusion  $105.49 \pm 21.65$  bpm. No hypotensive episodes necessitate the discontinuation of infusion were reported ( $100.45 \pm 15.42$  mm Hg). Majority of patients (55 %) were able to wean off midazolam after starting dexmedetomidine infusion, while 43% was still on midazolam infusion and the dose range of midazolam was 1-6 mcg/kg/min.

**Conclusion:** Using dexmedetomidine for sedation as a continuous infusion in the PICU seems to be relatively safe. Prospective randomized clinical trial is warranted to prove more safety and efficacy data on the use of dexmedetomidine infusion for the intubated pediatric patients.