

Unusual Response to Dexmedetomidine in Patient with Brain Injury on an Intrathecal Baclofen Infusion

A Elsharydah

Citation

A Elsharydah. *Unusual Response to Dexmedetomidine in Patient with Brain Injury on an Intrathecal Baclofen Infusion*. The Internet Journal of Anesthesiology. 2006 Volume 14 Number 2.

Abstract

Dexmedetomidine hydrochloride (Precedex®) is a potent and highly selective central alpha(2)-adrenoreceptor agonist, has sedative, analgesic and anxiolytic properties without respiratory depression. It is used mainly to provide sedation without causing respiratory distress or hemodynamic instability in the intensive care unit. Other uses include providing conscious sedation during awake fiberoptic intubation and other procedures required monitored care anesthesia.

I report a case here with unusual profound and prolonged sedative, hypnotic and analgesic effect of Dexmedetomidine administered to facilitate awake fiberoptic intubation in a patient with brain injury on intrathecal baclofen infusion (1.59 mg/day) for severe spasticity. This patient is a 45 year-old female (weight 70 kg) with history of brain injury and significant spasticity, who underwent a Baclofen intertheal pump replacement. Her list of medications includes Pergolide, Trihexyphenidyl, Amitriptyline, Nitrofurantoin, Levaquin, Hormonal patch, Ciprofloxacin, Oxycodone/Acetaminophen (5/325 mg)-last dose was in the morning of the procedure. Patient was awake and alert. In preparation for awake fiberoptic intubation, Glycopyrrolate 0.1 mg IV was administered and supplemental oxygen was applied. She received initial dose (1 mcg/kg) of Dexmedetomidine (diluted solution of 4 mcg/ml) over 10 minutes into an "infiltrated" IV access, another similar dose was infused into a good newly-established IV access, because of minimal response to the first dose, followed by a maintenance infusion 0.7 mcg/kg/hr (almost 15 minutes) during the intubation. She received no other sedatives before intubation. Few minutes after the second dose, patient was unresponsive. Her vitals signs were stable and she continued to breathe spontaneously. She had no or minimal gag reflex

to an oral airway placed to assist in oral fiberoptic intubation. Her intubation was quick and easy. During the case, anesthesia was maintained on 2 % Sevoflurane. No other anesthetics or muscle relaxants were used during the case. She showed minimal hemodynamic response to her right lateral positioning and to the surgical incision. The duration of the procedure was almost 1.5 hours. At the end of the case, Sevoflurane was turned off almost 25 minutes. Patient was breathing spontaneously, however, she was unresponsive. She had minimal gag reflex to throat suctioning. She was transferred to the recovery room on T-piece. Her responsiveness and reflexes began to improve slowly. The trachea was extubated after 40-50 minutes of her stay in the recovery room.

It is not clear why this patient responded to Dexmedetomidine in this way. Is it related to her brain injury, delayed response to the initial "subcutaneous" injection, interaction with her medications or pure response to Dexmedetomidine itself? Therefore it is recommended to be more cautious during Dexmedetomidine administration to patient with compromised CNS function or taking drugs affecting the CNS.

References

1. Grant SA, Breslin DS, MacLeod DB, Gleason D, Martin G; Dexmedetomidine infusion for sedation during fiberoptic intubation: a report of three cases. *J Clin Anesth*. 2004 Mar;16(2):124-6.
2. Scher CS, Gitlin MC; Dexmedetomidine and low-dose ketamine provide adequate sedation for awake fiberoptic intubation. *Can J Anaesth*. 2003 Jun-Jul;50(6):607-10.
3. Avitsian R, Lin J, Lotto M, Ebrahim Z; Dexmedetomidine and awake fiberoptic intubation for possible cervical spine myelopathy: a clinical series. *J Neurosurg Anesthesiol*. 2005 Apr;17(2):97-9.
4. Maroof M, Khan RM, Jain D, Ashraf M; Dexmedetomidine is a useful adjunct for awake intubation. *Can J Anaesth*. 2005 Aug-Sep;52 (7):776-7.

Author Information

Ahmad Elsharydah, M.D.

Department of Anesthesiology, Ohio State University Medical Center