

Efficacy of dexmedetomidine as an analgesic adjunct to labor epidurals with fewer side effects compared with traditional opioids: An integrative review

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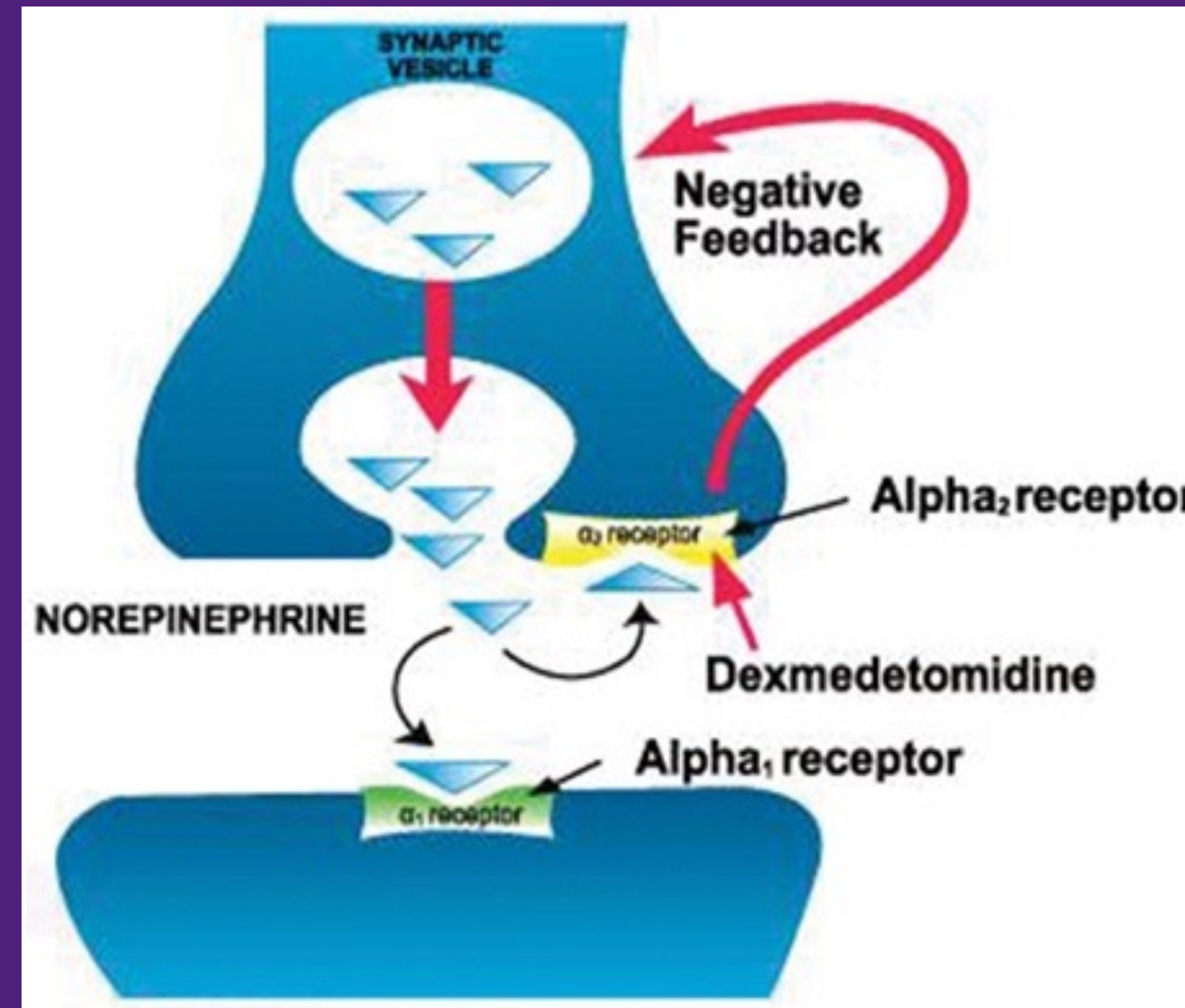
INTRODUCTION

- Opioids used as analgesic adjuncts in labor epidurals can cause pruritis in up to 60% of patients¹⁻²
- Dexmedetomidine is a highly selective alpha-2 adrenergic receptor agonist that has been used as an adjunct to local anesthetics in labor epidurals to reduce pain with fewer side effects³
- Studies have shown dexmedetomidine can diffuse through the dura mater into cerebrospinal fluid and act on the presynaptic and postsynaptic membrane of the spinal cord neurons³
- PICOT: In adult parturients with epidural analgesia, does the addition of dexmedetomidine to ropivacaine compared to the addition of opioids to ropivacaine, improve analgesic effect of the epidural through use of a visual analog pain scale, with decreased incidence of side effects, such as sedation and pruritis, during labor?

METHODS

- Databases searched: PubMed, CINAHL, and Embase
- Terms searched: *labor, epidural, dexmedetomidine, and analgesia*
- Inclusion criteria: *published within the last 5 years and human*
- PubMed: 40 studies, reduced to 20 by inclusion criteria, CINAHL: 11, and Embase: 54
- Best evidence articles yielded 4 RCT

Dexmedetomidine an effective analgesic adjunct to labor epidurals with fewer side effects than traditional opioids



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LITERATURE REVIEW/ CRITICAL APPRAISAL

- The studies collectively demonstrated superior pain control reported via VAS with dexmedetomidine⁴⁻⁷
- Pruritis was eliminated with dexmedetomidine⁴⁻⁷
- Dexmedetomidine significantly reduced incidence of other side effects: maternal bradycardia, maternal hypotension, fetal bradycardia, excessive sedation, respiratory depression, nausea, and vomiting⁴⁻⁷
- Conflicting motor blockade results, with Pang et al reporting increased Bromage scores at concentrations of dexmedetomidine 0.5 mcg/mL⁴⁻⁷
- No significant motor blockade noted in other 3 studies at same dexmedetomidine concentrations⁴⁻⁷
- Various dexmedetomidine dosing concentrations (0.25, 0.3, 0.4, and 0.5 mcg/mL) and volumes providing no clear optimal dose⁴⁻⁷

RECOMMENDATIONS for PRACTICE / CONCLUSIONS

- Superior efficacy of dexmedetomidine was demonstrated across all studies when compared to traditional opioids as an adjunct for labor epidurals⁴⁻⁷
- Safety of dexmedetomidine was mutually demonstrated through the decreased incidence of side effects and no adverse outcomes⁴⁻⁷
- Recommendations include incorporating dexmedetomidine as an adjunct to labor epidural analgesia at 0.4 to 0.5 mcg/mL concentrations
- Current evidence shows benefit of use but future studies to ascertain optimal dosing guidelines would be of value

