Beth Israel Deaconess Medical Center | HARVARD MEDICAL SCHOOL TEACHING HOSPITAL

Is Neuraxial Dexmedetomidine Administration Safe?

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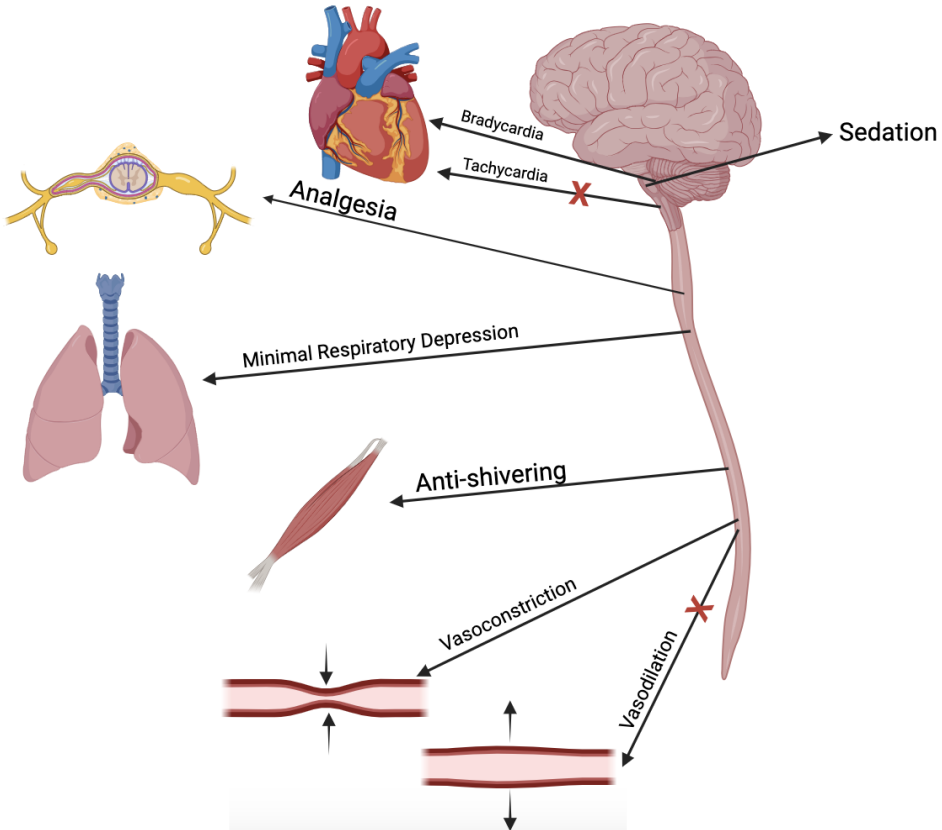
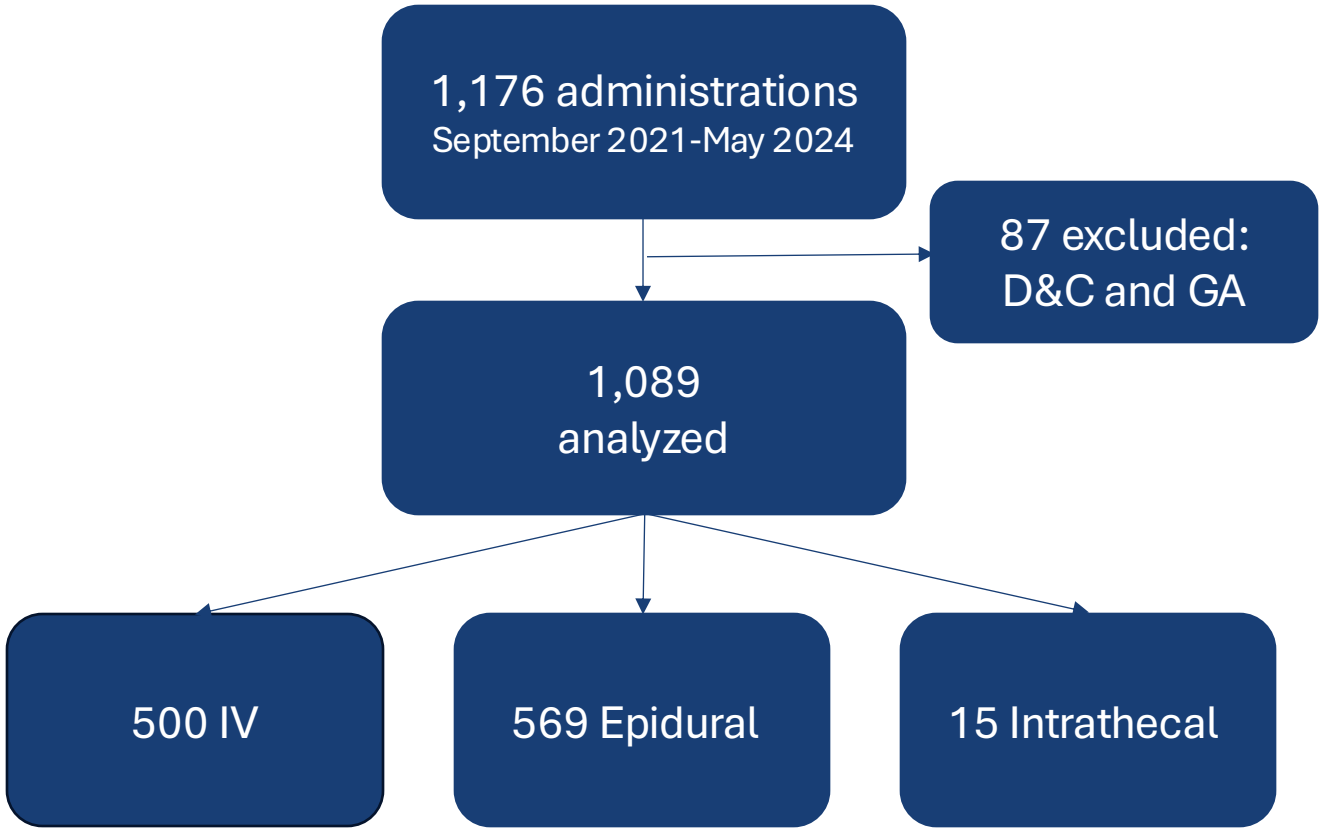


- Highly selective alpha-2-adrenoceptor agonist[1,2]
- Placental transfer is less common (0.77 M/F index)[3]
- Identifying an adverse event profile between routes of administration can help inform safe use in clinical practice

Study Design



Labor	IV	Epidural	IT
n	**6**	**205**	**1**
Avoid opioid	1	1	1
Breakthrough pain	1	186	0
Scapular pain	0	6	0
Cesarean conversion	0	12	0
Shivering	1	0	0
Other	1	0	0

Cesarean	IV	Epidural	IT
n	**494**	**364**	**14**
Shivering	204	1	0
Anesthesia	281	350	14
Other	9	13	0

Results

Adverse Events:

	IV (n=318)	Epidural (n=404)	Both (n=41)
HR abnormality	10%	2.3%	2.6%
Hypotension	10%	4.8%	2.5%
Bradycardia	2.5%	0.3%	5.1%
Sedation	2.5%	0%	2.5%
Doses	4-40 mcg (14.2)	5-75 mcg (20.7)	18-75 mcg (32.2)

3 patients required treatment:

- 90 mg esmolol after 30 mcg IV
- 60 mg esmolol after 30 mcg IV
- 0.2 mg of glycopyrrolate after 10 mcg IV and 20 mcg epidural

Adverse Events:

IV: 80/314 (25.5%) P < 0.001

Neuraxial: 27/376 (9.8%)

High Dose (≥30 mcg): 15%

Low Dose (<30 mcg): 12% P = NS

Discussion

- Low rates of side effects overall
- Few adverse events (3 patients required treatment (0.3%), one likely related)
- IV was associated with more events than neuraxial

Larger doses (≥ 30 mcg) were the only group that required treatment, so minimum effective dose should be used

References:
Diagram adapted from: Sanders, R. D., & Maze, M. (2011). Alpha2-agonists and other sedatives and amnestics. In A. S. Evers, M. Maze, & E. D. Kharasch (Eds.), *Anesthetic Pharmacology: Basic Principles and Clinical Practice* (pp. 478–492). chapter, Cambridge: Cambridge University Press.
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1.PMID: 22248773 2.PMID: 30945105 3.PMID: 28449631