Evaluation of Clonidine Use for Dexmedetomidine Weaning in Patients Admitted to the Trauma Service

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Introduction

Dexmedetomidine was approved by the FDA in 1999 as a short-term (≤24 hours) sedative[1]

Similar efficacy, decreased time mechanically ventilated and incidence of delirium resulted in use as a long-term (≥72 hours) sedative[2-3]

Reports of hypertension, tachycardia, and agitation associated with timing of discontinuation[4]

Clonidine considered as option to wean dexmedetomidine given its similar mechanism of action and oral availability

Background

Limited evidence for the use of clonidine to wean dexmedetomidine

Study	Population	Intervention	Results, no. (%)
Gagnon 2015	20 mixed ICU	0.2-0.5 mg q6h	Wean in 48hrs: 15 (75)
Terry 2015	21/26 CVICU	Not specified	Wean in 8hrs: 17 (65)
Bhatt 2020	42 mixed ICU	CLON protocol v. DEX only	DEX wean: (19 v. 42hrs; p=0.02)

Gap: few studies with comparator groups and no studies exclusively in patients admitted to a trauma service

Study Purpose & Hypothesis

- To assess the utilization of enteral clonidine to facilitate dexmedetomidine weaning in patients admitted to the trauma service
- Use of enteral clonidine will result in faster time to discontinuation of dexmedetomidine

Correspondence and Disclosure

- All questions may be directed to the primary investigator using the following contact information: **rhea.soltau@fmolhs.org**
- Authors have **no disclosures** to report concerning possible financial or personal conflicts of interest

Methods

IRB approved

Retrospective chart review

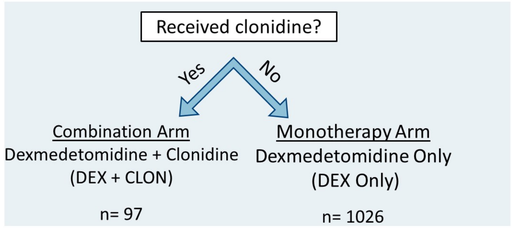
July 1, 2017 – August 31, 2022

Inclusion:

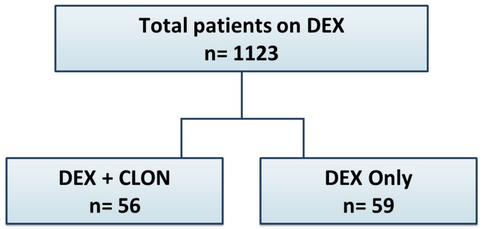
- ≥18 years old
- Admitted to the trauma service
- Received dexmedetomidine ≥72 hours

Exclusion:

- Listed below



Results



Exclusion, no.	DEX + CLON	DEX
DEX <72hrs	21	73
Wean <72hrs	18	16
CLON patch	2	0
Not screened	0	878

Characteristics	DEX + CLON (n= 56)	DEX Only (n= 59)	*p* value
Age (yrs), mean ± SD	39 ± 14	49 ± 18	**0.002**
Mechanism of injury, no. (%)			
Other	2 (3)	13 (22)	**0.01**
Injury type, no. (%)			
TBI	23 (41)	14 (23)	**0.003**
Other	3 (5)	17 (28)	**0.003**
GCS, median (IQR)	8 (7 to 10)	11 (8 to 15)	**0.001**
RASS, median (IQR)	-2 (-3 to -1)	-1 (-2 to 0)	**0.001**
Intubated, no. (%)	21 (37)	12 (20)	**0.042**
DEX dose at wean (mcg/kg/hr), median (IQR)	0.6 (0.1 to 1.1)	1.3 (1.0 to 1.5)	**<0.001**
DEX duration at wean (days), median (IQR)	5.4 (3 to 9)	4.5 (3 to 5)	**0.05**

Results

Primary Outcome, median (IQR)	DEX + CLON (n= 56)	DEX Only (n= 59)	*p* value
Duration of DEX wean (days)	1.9 (0.5 to 4.3)	2.5 (0.98 to 4.0)	NS

Secondary Outcomes	DEX + CLON (n= 56)	DEX Only (n= 59)	*p* value
DEX restarted, no. (%)	4 (7)	35 (59)	**<0.001**
Mortality, no. (%)	4 (7)	15 (25)	**0.008**
Experienced DWS, no. (%)			**0.037**
BP ≥180/90 mmHg	2 (5)	1 (3)	NS
HR ≥120 bpm	24 (60)	23 (74)	NS
New agitation	33 (82)	18 (58)	**0.02**
LOS (days), median (IQR)			
ICU	25 (9 to 27)	18 (11 to 25)	**0.02**
Hospital	29 (18 to 40)	23 (13 to 33)	NS

NS: not statistically significant

Discussion and Conclusions

- First study to evaluate the use of clonidine for dexmedetomidine weaning exclusively in a trauma population
- Use of enteral clonidine did not decrease the time to wean dexmedetomidine in patients admitted to the trauma service
- Dexmedetomidine only group restarted dexmedetomidine significantly more often than the dexmedetomidine + clonidine group

Important considerations

- DEX + CLON group had a higher severity of illness on admission and more likely to have a TBI as the primary injury
- DEX + CLON group was on DEX longer prior to wean initiation

References

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