

Appendix D

Dihydroergotamine For Refractory Migraine in the ED

Specific Care Question :

In the pediatric patient diagnosed with a refractory migraine, what is the efficacy of DHE IV to decrease migraine pain in the Emergency Department?

Question Originator:

Migraine Therapy in the ED CPG Team

Plain Language Summary from The Office of Evidence Based Practice:

Migraine in the ED Team Recommendations: Based on very low quality evidence the Migraine in the ED CPG Teams makes a conditional recommendation against the use of DHE as the first line treatment of refractory migraine in the ED. However, it may be considered if:

- Hospital admission is anticipated
- Triptans have not been administered in the previous 24 hours.
- Subsequent doses of DHE can be administered

The key points are:

- Response to treatment with DHE may not be apparent until after the fifth dose and it is dosed every 8 hours (Kabbouche, et al., 2009)
- DHE cannot be given if the patient has received triptans with the previous 24 hours (Lexi-Comp, 2016).

Dose: Dihydroergotamine-

IV: 1mG, repeat 8 hours, improvement usually seen after the fifth dose

IM/SC: 0.5- 1mG, repeat hourly if needed (max 3mG/day)

Nasal: 0.5mG each nostril Q15 min (max 3mG/day)

Literature read and analyzed by:

Patricia Lanzer, RN, NNP-BC

Jamie Menown, RN, CPN

Joyce McCollum, RN, CNOR

Office of Evidence based Practice:

Nancy H. Allen, MS, MLS, RD,LD, EBP Program Manager

Search Strategy and Results:

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PubMed

"Dihydroergotamine"[Mesh] AND ("Migraine Disorders/prevention and control"[Mesh] OR "Migraine Disorders/therapy"[Mesh]) Filters: From 2009/01/01 to 2014/12/31, Humans, English, Child: birth-18 years

EMBASE

#5

#4 AND (2009:py OR 2010:py OR 2011:py OR 2012:py OR 2013:py OR 2014:py) **92 #4#2 AND #3 3,869**

#3 'migraine'/exp AND [english]/lim AND ([infant]/lim OR [child]/lim OR [preschool]/lim OR [school]/lim OR [adolescent]/lim) AND [embase]/lim **128**

#2 'dihydroergotamine'/exp AND [english]/lim AND ([infant]/lim OR [child]/lim OR [preschool]/lim OR [school]/lim OR [adolescent]/lim) AND [embase]/lim **5,518**

#1 'dihydroergotamine'/exp OR 'dihydroergotamine'

Studies included in this review:

Seven studies were identified; six were excluded, and one included. The included study Kabbouche, et al. (2009) is indirectly applicable to the ED setting. It is included here because DHE cannot be given if triptans have been administered to the patient within the previous 24 hours.

Excluded Studies and Reason for Exclusion

Study	Reason for Exclusion
Aurora 2009	Inhaled DHE
Aurora 2011	Inhaled DHE
Charles 2010	Outpatient IV DHE administration- Does not answer the question
Fisher 2007	Inhaled DHE
Raina 2013	Case study of abdominal migraine
Tepper 2011	Inhaled DHE Conference presentation

Method Used for Appraisal and Synthesis:

The Cochrane Collaborative computer program, Review Manager (RevMan 5.3.5).

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Characteristics of included study:

Table:

Kabbouche, et al., 2009

Methods	Retrospective cohort-
Participants	All pediatric patients admitted for inpatient treatment of status migraine and intractable headache. Over a six week period. Abortive therapy in the outpatient setting (NSAIDs and or a triptan). All triptan treatment must have been administered at least 24 hours prior to DHE administration N=32 consecutive charts All received hydration (20ml/kg D5NS), all received either prochlorperazine or metoclopramide as antiemetic for the first 3 DHE doses. After 3 DHE doses, ondansetron was used as an antiemetic. mean age 14.52 +/- 1.91 years
Interventions	Dose <ul style="list-style-type: none">• Children > 9 years old or > 25 kgs Dose 1 mG IV over 3 minutes every 8 hours• Children < 9 year old or < 25 kgs Dose 0.5 mG IV over 3 minutes every 8 hours A test dose of one half the initial dose appropriate for age and weight If test dose was tolerated the remainder of the dose was given half an hour later The DHE dose ws continued every 8 hours until headache freedom plus one additional dose or until the maximum of 20 doses were given (Aurora, et al., 2011)
Outcomes	Pain response- number of doses to reach 50% improvement on VAS (0-10),lower is better Pain response- number of doses to reach 100% improvement on VAS (0-10),lower is better
Notes	Mean severity of headache was 8.45 +/- 2.41 on a ten point scale. LOS was 2.6 +/- 1.8 days in the inpatient unit Did not report number of doses to attain 50% reduction in pain score. 40% of subjects were headache free by the fifth dose of DHE (13/32) 74% of subjects were headache free at hospital discharge (24/32) Mean pain score was 1.1 +/- 2.2 on a ten point scale at discharge Adverse effects: Nausea and vomiting 91.4%; chest tightness 6%; hives 2.8%; face flushing 2.8%; increased blood pressure 2.8%; no side effects 8.6% Response to treatment generally occurred after the 5 dose