APPENDIX

Intravenous dihydroergotamine protocol

Generic name: Dihydroergotamine (DHE)

Available dosage form: 1 mg/1 mL

Indication/procedure: DHE is used in the treatment of medically refractory migraine and cluster headache

Admission

- Check any complicating medicines, such as triptans, 5-HT1B/1D receptor agonists, have been discontinued
- Vital sign recording: heart rate, blood pressure, respiratory rate, temperature, oxygen saturation, upon admission and then prior to each DHE dose

Baseline

- EKG
- Weight
- Laboratory tests: complete blood count with differential, sodium, potassium, chloride, blood urea nitrogen, creatinine, glucose, calcium, magnesium, phosphate, prothrombin time, partial thromboplastin time, international normalized ratio
- Urine: for pregnancy (if female) and toxicology screen

Potential side effects/adverse events

- Nausea and vomiting, leg cramps, limb pain, chest discomfort, abdominal cramps, diarrhea, paraesthesias
- Cardiovascular effects: vasospasms, tachycardia, bradycardia, hypertension
- Coldness of the skin and/or numbness and tingling of the extremities may indicate ergotism, which can include gangrene

Contraindications/warnings

- Peripheral vascular disease, coronary heart disease, history of cerebrovascular event, severe or poorly controlled hypertension
- Impaired liver or renal function
- Pregnancy

Adult dosing: intermittent IV infusion of DHE for patients older than 16 years or weighing more than 50 kg (it is essential to control nausea during the use of dihydroergotamine; dose and rate of infusion may need to be adjusted as described below)

- The patient should be pretreated with ondansetron (ondansetron may be substituted for granisetron or other appropriate antiemetic drugs based on local clinical practice or particular clinical settings; the key practice point is to strive to minimize nausea) 4 mg IV every 8 hours, 30 minutes before each DHE infusion.
- If the patient has baseline nausea, consider using 8 mg ondansetron as premedication.
- When available, domperidone 10–20 mg orally or by suppository may be used.

Day 1: First dose: 0.5 mg in 100 mL of normal saline over 1 hour
If well tolerated, escalate dosing as follows:
Second dose, 8 hours later: 0.75 mg in 250 mL of normal saline over 1 hour

Day 2–5: Third and subsequent doses: 1 mg in 250 mL of normal saline over 1 hour every 8 hours for 10 doses with the goal of a cumulative total dosage of 11.25 mg (± 1 mg)

Pediatric dosing: weight-based dosing recommendations

Dosing should be adjusted and may require some individualization:

\[ Dose (mg) = \left( \text{adult dose in mg} \right) \times \left( \text{patient weight in kg} \right) \times (0.014) \text{ mg} \]

Side effect management

- If the patient has moderate or severe nausea, even with the routine premedication with ondansetron, consider:
  1. Increasing the ondansetron dose, either by increasing the standing order to 8 mg every 8 hours or by adding 4 mg as an every 8 hour PRN dose to the 4 mg every 8 hours routine, standing order.
  2. Add in another antiemetic such as promethazine 12.5–25 mg IV every 12 hours as needed.
  3. Slowing the rate of infusion to over 2 or 3 hours.
  4. Not escalating the dose or if already at 1 mg, consider reducing the dose to the highest that the patient can tolerate.

- For muscle cramping or joint pain, consider naproxen 500 mg every 12 hours as needed