

## Intrathecal Baclofen Pumps: A Guide for ED Clinicians

Intrathecal baclofen pumps are high-risk devices that can cause serious adverse effects in the setting of pump malfunction or mis-programming. Adverse effects may be a result of either overdose of baclofen or underdose / withdrawal. Recognizing potential pump-related adverse events on clinical presentation can drive patient management.

Overdose Symptoms		Underdose / Withdrawal Symptoms	
<b>Early symptoms</b> <ul style="list-style-type: none"> <li>• Drowsiness</li> <li>• Lightheadedness</li> <li>• Dizziness</li> <li>• Somnolence</li> <li>• Respiratory depression</li> <li>• Hypothermia</li> </ul>	<b>Late and severe symptoms</b> <ul style="list-style-type: none"> <li>• Seizures</li> <li>• Rostral progression of hypotonia</li> <li>• Loss of consciousness</li> <li>• Coma</li> </ul>	<b>Underdose</b> <ul style="list-style-type: none"> <li>• Pruritus</li> <li>• Hypotension</li> <li>• Paresthesias</li> <li>• Fever</li> <li>• Altered Mental Status</li> </ul>	<b>Withdrawal</b> <ul style="list-style-type: none"> <li>• Exaggerated rebound spasticity and muscle rigidity significantly different than baseline</li> <li>• Rhabdomyolysis</li> <li>• Multiple organ failure</li> <li>• Seizures</li> <li>• Death</li> </ul>

### Treatment strategy for suspected baclofen underdose or withdrawal

- Assess for irritants or stressors that increase spasticity (infection, pressure sores, fecal impaction, urine retention)
- Obtain abdominal lumbar x-ray to evaluate pump connection (concern for mechanical failure)
- Contact PM&R resident on-call via PING (PM&R Physician Consults, JHH) during business hours or via HAL line (available 24/7 for consults). **This service routinely manages intrathecal pump patients while in the hospital and can be consulted to help guide ED management.**
- Administer PO baclofen based on patient's current intrathecal dose for mild to moderate withdrawal symptoms
  - o Current intrathecal baclofen doses are documented in Epic PM&R procedure note

Intrathecal baclofen dose	Initial PO baclofen conversion
< 500 mcg/day	10 mg PO every 4 hrs
500 – 1,000 mcg/day	20 mg PO every 4 hrs
> 1,000 mcg/day	40 mg PO every 4 hrs

- Consider IV benzodiazepines for patients with signs of severe baclofen withdrawal (described above) or who do not respond to PO baclofen, or who are unable to tolerate PO
  - o Intermittent IV benzodiazepines are preferred and should be titrated to response

### Treatment strategy for severe overdose

- Overdose should not occur unless there has been a recent refill or reprogramming within the last 48 hours. In patients who are lethargic without a recent refill, look for other causes.
- Contact PM&R resident as above
- Pump should be turned off and emptied. PM&R resident will be responsible for completing this process, including emptying the pump
- Supportive measures should be initiated (IV fluids, airway protection, benzodiazepines for seizures or agitation)

Additional Resources are available on the Medtronic website under emergency procedures:

<https://professional.medtronic.com/pt/neuro/itb/edu/Post-implant-education-patient-care/index.htm>

#### References:

1. Product information : Lioresal® intrathecal baclofen injection. Medtronic, Inc. Minneapolis, MI. 2013
2. Coffey RJ, Edgar TS, Fancisco GE, et.al. Abrupt withdrawal from intrathecal baclofen: Recognition and management of a potentially life-threatening syndrome. Arch Phys Med Rehabil. 2002; 83:735-41

