

Lorazepam

Sources:

- Sandoz Canada is the sole supplier of Lorazepam 4mg/ml (DIN: 02243278)
 - Expected resupply mid December 2013

Indications and Clinical uses in Canada (1):

- Treatment of excessive anxiety when oral therapy not feasible
- Used pre-operatively to reduce sedation and anxiety, and provide anterograde amnesia
- Treatment of status epilepticus
- Antiemetic adjunct in chemotherapy
- Palliative care adjunct (eg. for agitation, sedation)

Treatment alternatives:

*Assuming oral route not feasible

- Anxiety or agitation:
 - Diazepam 10-20mg IV equally effective to lorazepam 2-4mg IV in several studies (2,3,4)
 - Haloperidol 5mg IM equally effective as lorazepam 2mg IM for acute agitation in psychotic patients (5)
 - Olanzapine 10mg IM x2 equally effective as lorazepam 2mg IM x2 for acute agitation in bipolar disorder (6)
- Pre-operative use
 - Diazepam 10-20mg IV produced same reduction in pre-operative anxiety and sedation. The amnesia effect occurred sooner with diazepam, but considered of similar magnitude with lorazepam (7)
 - Midazolam IV equally efficacious compared to lorazepam IV to achieve sedation, however has higher dose requirements (14.4mg midazolam vs. 1.6mg lorazepam for similar sedation) due to rapid elimination, and thus higher cost. (8)
- Status epilepticus
 - Fosphenytoin 20mg/kg IV (phenytoin equivalents) at 150mg/min
 - Diazepam 0.15mg/kg IV followed by phenytoin 18mg/kg IV equally effective; however, lorazepam IV has a much longer duration of anti-seizure effect (12-24 hours lorazepam, vs. 15-30 minutes diazepam) (9)

- Midazolam 0.2mg/kg bolus followed by 0.05 mg – 0.4 mg/kg/h continuous IV equally effective compared to lorazepam; however, rapid elimination necessitates more frequent dosing (10)
 - Phenobarbital 15mg/kg alone equally effective vs. lorazepam IV 0.1mg/kg alone, but slow administration, prolonged sedation, and higher risk of hypoventilation and hypotension are drawbacks (10)
- Antiemetic in chemotherapy
 - Many options; refer to [NHS Clinical Knowledge Summaries](#)

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References:

1. Bedard, M., Massicotte, A., Prasad, S. Parenteral Drug Therapy Manual, 33rd edition. The Ottawa Hospital.
2. Haider I: A comparative trial of lorazepam and diazepam. Br J Psychiatry 1971; 119:599-600.
3. Singh AN & Saxenia B: A comparison of lorazepam, diazepam and placebo in the treatment of anxiety states. Curr Ther Res 1974; 16:149-162.
4. Padron C: Comparative clinical evaluation of lorazepam and diazepam. Praxis 1974; 63:494.
5. Battaglia J, Moss S, Rush J, et al: Haloperidol, lorazepam, or both for psychotic agitation? A multicenter, prospective, double-blind, emergency department study. Am J Emerg Med 1997; 15:335-340.
6. Meehan K, Zhang F, David S, et al: A double-blind, randomized comparison of the efficacy and safety of intramuscular injections of olanzapine, lorazepam, or placebo in treating acutely agitated patients diagnosed with bipolar mania. J Clin Psychopharmacol 2001; 21(4):389-397.
7. Conner JT, Katz RL, Bellville JW, et al: Diazepam and lorazepam for intravenous surgical premedication. J Clin Pharmacol 1978; 18:285-292.
8. Cernaianu et al. Lorazepam and midazolam in the intensive care unit: a randomized, prospective, multicenter study of hemodynamics, oxygen transport, efficacy, and cost. Critical Care Medicine 1996; 24:2-222.
9. Lowenstein DH & Alldredge BK: Status epilepticus. N Engl J Med 1998; 338(14):970-976.
10. Treiman DM, Meyers PD, Walton NY, et al: A comparison of four treatments for generalized convulsive status epilepticus. N Engl J Med 1998; 339(12):792-798.