

Prescribing Corner

Myth vs science & experience in using meperidine (Demerol) for chronic pain

Scenario:

A 43 year-old female visits your office as a new patient. Her current physician is retiring and she is hoping you will refill her medications, including oral meperidine (Demerol) 100 mg QID, which she takes on a daily basis for chronic headaches.

What are your thoughts regarding prescribing this medication for chronic pain?

This is a common scenario for many physicians so we asked chronic pain expert Dr. Chris Spanswick, of the Chronic Pain Centre in Calgary, what his response would be.

Meperidine was first synthesized in 1939 as an atropine analogue. Noting its analgesic properties, its use for moderate-to-severe pain began. Meperidine was also considered to have less spasmogenic effect on smooth muscle, and produced less risk of addiction, respiratory depression, constipation and urinary retention. Studies since then show the spasmogenic properties are similar to other opioids at equianalgesic doses.

However, these same studies demonstrate meperidine is a poor analgesic, performing lower for post-operative pain than other opioids, and with greater variability in outcome. 75mg parentally produces analgesia that may last as little as 30 minutes. 50mg orally has demonstrated in several randomized, double-blind trials to be no more effective than a placebo.

Traditionally, use of meperidine was specific to treating pain from cholecystitis

and pancreatitis. However, this type of clinical use is **not** supported by scientific findings. In fact, the use of meperidine lacks evidence to support superiority over other currently available opioids, and offers a greater risk of serious side effects. Much of meperidine's historical clinical use is based on anecdotal versus scientific evidence. A recent review of the literature confirms that meperidine has no advantages over other currently available opioids, and more potential for serious side effects. Some countries, such as Australia, restrict meperidine use because the risks and side effects outweigh any potential benefits.

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Meperidine has unique properties that can increase the risk of addiction in susceptible individuals, much more than observed with other opioids. Use of the medication also produces:

- more pronounced euphoric effects
- very intense central effects that are short-lived (approximately five minutes) and produce a rapid and fleeting "reward".



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If you have feedback or comments on this month's Prescribing Corner, contact Dr. Susan Ulan, Senior Medical Advisor at:

780-969-4930, 1-800-561-3899 ext. 4930 (in Alberta), or email sulan@cpsa.ab.ca.

When used for treatment, meperidine metabolizes into normeperidine, a non-opioid but active metabolite. Normeperidine is neurotoxic and can precipitate anxiety, hyperreflexia, myoclonus, seizures and mood changes within 24 hours. Low levels of normeperidine can also be associated with serious side effects, even in healthy subjects with normal renal function.

Overall, long-acting drugs that produce consistent blood levels are more effective in treating long-term pain. Opioids with short-lived effects such as meperidine are not recommended for chronic non-cancer pain. You should consider other analgesics instead.

A memorable metaphor from Dr. Spanswick

Dr. Spanswick uses the following metaphor with his patients to explain the difference between short- and long-acting medications:

"Short-acting medications are like getting into a hot tub on a cold day and give you an immediate feeling of 'Aaah'. Long-acting medications are like wearing a warm coat that keeps you warm all day, but without that same 'Aaah' feeling".

Reference: Latta KS, Ginsberg B, Barking RL. Meperidine: A Critical Review. American Journal of Therapeutics 2002; 9:53-63.