

Description

The development of naltrexone was the result of pharmaceutical research conducted within the Dupont pharmaceutical group in the 1960s and 1970s that produced a series of opiate antagonists including naloxone, nalmefene, nalorphine and naltrexone. Applications in veterinary medicine began after its patent expired in the early 1990s.

Indications:

Wildlife Management

Veterinarians prescribe Naltrexone hydrochloride for the antagonism of any opiate sedation in any species. When compared to naloxone, naltrexone hydrochloride has been shown to have a longer metabolic half-life and lower incidence of re-narcotization.

Domestic Species

Naltrexone has reported uses in the published literature for repetitive behavior syndromes in horses and birds.

Pharmacokinetics

Naltrexone hydrochloride is a cyclopropyl derivative of oxymorphone and is metabolized in the liver. Its relative antagonistic potency is approximately twice that of naloxone and 17 times that of nalorphine, to both of which it is structurally similar. [Crabtree 1984, Clinical Pharm 3:273-280]

Chemistry

Naltrexone is often described as a substituted oxymorphone – where the tertiary amine methyl-substituent is replaced with methylcyclopropane. Naltrexone, and its active metabolite 6-β-naltrexol, are competitive antagonists at the μ- and κ-opioid receptors, and to a lesser extent at the δ- opioid receptor. This blockade of receptors is the basis behind naltrexone's action in the management of opioid dependence in humans. It reversibly blocks or attenuates the effects of opioids.

Naltrexone HCl is 17-(cyclopropylmethyl)-4,5-epoxy-3,14 dihydroxymorphinan-6-one hydrochloride. Its molecular formula is: $C_{20}H_{24}ClNO_4$.

How Supplied

Naltrexone hydrochloride is currently compounded by ZooPharm at a concentration of 50 mg/ml in a 30 ml vial.

Dosage & Administration

For dosing guidelines, please reference the handbook shown below.

**Handbook of wildlife chemical immobilization.
Wildlife Pharmaceuticals, 2002.**

*Kreeger, Terry John, John M. Arnemo,
and Jacobus P. Raath.*

Contraindications & Precautions

WARNING:

The user of naltrexone must be proficient in appropriate procedures necessary to handle problems resulting from animals being in lateral or sternal recumbency for extended periods of time. Users must also have necessary equipment, supplies and experienced personnel to handle such situations that may occur during or following immobilization and reversal procedures to minimize possible injury to the animal or personnel.

Reversal of the effects of opiate immobilization is usually accomplished within 3 to 10 minutes of administration of naltrexone.

After administering naltrexone hydrochloride to an animal that has been immobilized with opiate agonists, the animal may rise quickly and be fully conscious in as little as 2 minutes. All necessary procedures should have been accomplished and personnel advised that the reversal agent has been administered. Side effects associated with administration of opiate agonists, such as muscle tremors or heavy panting, may not immediately abate upon administration of the reversal agent.

*The information is intended for use by veterinary professionals only and is made available on the express condition that no liability, expressed or implied, is accepted by ZooPharm for the accuracy, content, or use thereof. The information is to be used entirely at the reader's discretion. Practitioners and wildlife industry professionals should rely on their own expertise, knowledge and judgment and the particular circumstances of each patient when determining the appropriate dose for administration in target species.

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