Medetomidine HCl

ZooPharm

Description

Medetomidine and its analog detomidine were developed within the research arm of Farmos of Turku, Finland in the 1970s, Dr. Harry Jalanka of the Helsinki Zoo conducted pioneering research in the use of medetomidine in zoo and freeranging wildlife, laying the foundation for expansion into other species. Medetomidine was approved in the US in 1995 under the trade name of Domitor.

Indications: Wildlife Management

Medetomidine is prescribe by veterinarians to provide pharmacological restraint and pain relief to facilitate the handling of animals for diagnostic or therapeutic procedures, and minor surgical procedures. Veterinarians often use medetomidine in combination with the dissociative ketamine. The combination of this potent alpha-two agonist and ketamine allows the immobilization of most non-domestic species, characterized by an animal that is very manageable and in a good state of analgesia.

Its high potency as an alpha-two agonist has made this drug useful in designing non-opiate combinations that can be used to capture free-ranging species. In the field, the use of medetomidine in combination with ketamine, butorphanol, and azaperone is designed to offer a reversible non-opiate combination for an affective level of analgesia and muscle relaxation.

Medetomidine combined with ketamine has found new applications in cervids, large felids, mustelids, and bear in North America. Its high potency is designed to allow for the capture of free-ranging wildlife. Its concentration of 20 mg/ml has made it useful in dart delivery.

In domestic species, Medetomiding Hydrochloride is routinely used in dogs.

Pharmacokinetics

Medetomidine is 10% more potent than xylazine and has a higher alpha-two agonist receptor affinity which produces sedation and analgesia. Spontaneous muscle contractions may be seen in some animals sedated with medetomidine.

Chemistry

Medetomidine hydrochloride chemically is -4-[1-(2,3-dimethylphenyl) ethyl] -1H-imidazole monohydrochloride. It's molecular formula is: $C_{13}H_{17}ClN_2$.

How Supplied

Medetomidine was approved by FDA in a 1 mg/ml concentration. It is available from ZooPharm in compounded concentrations of 10mg/ml (10 ml vial), 20mg/ml (5 ml vial) and 40 mg/ml (5 ml vial) by prescription in the United States.

Medetomidine HCl

ZooPharm

Dosage & Administration

The dose range for medetomidine in non-domestic species is wide and variable. Professionals are advised to refer to the Handbook of Wildlife Chemical Immobilization and current published literature for the best information on the species, dose, and combinations that have been effective in field and clinical use.

Medetomidine may be administered intravenously and /or intramuscularly. In wildlife, darting or other remote delivery is typically used as the method for intramuscular injection. Following injection with medetomidine or medetomidine combinations, veterinarians typically recommend the animal should be allowed to rest quietly for at least 15 minutes post achieving sternal recumbency, as long as the animal is in a safe position and environment.

Contraindications & Precautions

Veterinarians advise that Medetomidine hydrochloride should NOT be used in animals with the following conditions: cardiac disease, respiratory disorders, liver or kidney diseases; animals in shock, animals which are severely debilitated, or animals which are stressed due to extreme heat, cold or fatigue.

As with all alpha-two agonists, there is potential for isolated cases of hypersensitivity, including paradoxical response (excitation) exists. Incidents of prolonged sedation, bradycardia, cyanosis, vomiting, apnea, death from circulatory failure with severe congestion of lungs, liver, kidney and recurrence of sedation after initial recovery have been reported in domestic species.

WARNING:
In non-domestic animals not responding satisfactorily to administration of Medetomidine hydrochloride, veterinarians do not recommend repeat dosing via dart until after at least 30 minutes have passed.