MARBOFLOXACIN

Drug Class: Fluoroquinolone

Spectrum: Like other fluoroquinolones, marbofloxacin has a broad spectrum, including various Gram positive and Gram negative bacteria. It has poor activity against anaerobes. It is particularly useful as a drug targeting Gram negative bacteria of the Enterobacteriaceae family (e.g. *E. coli, Enterobacter*). It has good activity against staphylococci, with less predictable activity against streptococci and enterococcus.

Resistance: Resistance is a potential concern in both Gram positive and Gram negative bacteria. This can occur both through mutations and acquisition of transferable resistance genes.

Mechanism of Action: Marbofloxacin exhibits bactericide last activity in a concentration dependent manner, through effects on DNA gyrase. As a concentration dependent drug, high peak drug levels are important, so once daily dosing is used.

Route of Elimination: Elimination is primarily through the kidneys, and high levels of active drug are present in urine.

Adverse Effects: There are concerns about articulate cartilage damage when enrofloxacin is used in growing dogs, but the risks associated with marbofloxacin appear to be less. At clinically relevant doses, the risk of cartilage damage is low. However, it is recommended that marbofloxacin not be used in growing dogs and cats. Use of enrofloxacin in dogs with *Streptococcus canis* infection has been associated with induction of necrotizing fasciitis; however, there is no evidence that the risk also applies to marbofloxacin. Similarly, there is no evidence that retinopathy associated with enrofloxacin use also occurs with marbofloxacin.

Contraindications: Marbofloxacin use should be avoided in growing animals.

Common uses: As a critically important antimicrobial, marbofloxacin is typically recommended for treatment of infections resistant to common first line options. It is a useful second tier option for infections such as cystitis and pyoderma. This drug is well distributed throughout the body and is a first line treatment for bacterial prostatitis and pyelonephritis. It is also often used, in combination with a drug with greater Gram positive activity (e.g. ampicillin or clindamycin) for broad spectrum empirical therapy in cases of suspected sepsis.

Dosing:

- ***Dogs and cats: 2.75 mg/kg PO q24g***

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Veterinary Drug Director Category: I (Very High Importance).

Approved veterinary products in Canada: Yes, for both dogs and cats. Oral.