



## KETOROLAC: SIMULTANEOUS SUPPRESSION OF NEUROINFLAMMATION<sup>+</sup> AND SEVERE CHRONIC PAIN (SCP)

Ketorolac is the only medicinal that simultaneously and significantly suppresses neuroinflammation and severe chronic pain (SCP). When used on a low dose, intermittent basis, it is highly recommended for adhesive arachnoiditis (AA) and other causes of SCP. On this basis, the benefits, in our estimation, far outweigh the risks.

UNIQUE ATTRIBUTES: We know of no other anti-inflammatory that has all of these attributes.

1. Suppresses the N-methyl-d-aspartate receptor (NMDA)
2. Activates endorphin, dopamine, and serotonin
3. Inhibits prostaglandin synthesis
4. Crosses the blood brain barrier and enters spinal fluid
5. Non-addictive

USE IN ONGOING PAIN MANAGEMENT: Ketorolac is best used on a low dose, periodic basis and not daily. The usual starting dosage is 15 to 30 mg on 1 or 2 days a week (e.g. Monday and Thursday). Maximal recommended weekly dose for persons under age 70 is 60 mg. For those over 70, maximal dosage is 30 mg a week.

COMBINED USAGE: Ketorolac can be used simultaneously with methylprednisolone, acetaminophen, and vitamin B-12 for extra effects. Use of methylprednisolone on days that ketorolac is not used is a popular therapeutic approach. It can be used with opioids to minimize their need.

SIDE EFFECTS: Ketorolac cannot be used over 5 consecutive days due to possible renal impairment and gastrointestinal bleeding. If used over 3 times a week we recommend a renal function test be done every 30 to 60 days.

ADMINISTRATION: Ketorolac is available in 10 mg tablets or injections of 15 or 30 mg per ml. It can be used orally, subcutaneously, or intramuscularly.

\*Neuroinflammation is in the central nervous system (CNS) which is the brain and spinal cord.

+Severe, chronic pain is constant and may also be called intractable or persistent. It is partially caused by disruption and dysfunction of the receptor-neurotransmitter systems.

References:

1. Vacha, et al. The role of subcutaneous ketorolac for pain management. Hosp Pharm 2015;50:108-112.
2. Stubhaug, et al. Methylprednisolone and ketorolac rapidly reduce hyperalgesia around a skin burn injury and increase pressure pain threshold. ACTA Anesthesiol Scand 2002;51:1138-1146.
3. Satgiu, et al. Central effect of ketorolac involving NMDA receptor activity. Brain Res 1998;813:223-226.