### Indications
Short-term management of pain (not to exceed 5 days total for all routes combined).

### Action
Inhibits prostaglandin synthesis, producing peripherally mediated analgesia. Also has antipyretic and anti-inflammatory properties.

### Indications
- Short-term management of pain (not to exceed 5 days total for all routes combined).

### Contraindications/Precautions
- Use cautiously in:
  - Cardiovascular disease or risk factors for cardiovascular disease (may increase the risk of cardiovascular thrombotic events, myocardial infarction, and stroke, especially with prolonged use).
  - Heart failure (concomitant use with pentoxifylline or clopidogrel may raise the risk of adverse hematologic reactions).
  - Renal failure (increased risk of adverse hematologic reactions).
  - Severe hepatic impairment (reduced renal excretion).
  - Risk of serious cardiovascular thrombotic events, myocardial infarction, and stroke.

### Adverse Reactions/Side Effects
- **CNS:** dizziness, euphoria, headache.
- **CV:** edema, pallor, vasodilation.
- **EENT:** lacrimation (spray), nasal discomfort (spray), throat irritation (spray).
- **GI:** nausea, dyspepsia, diarrhea, dry mouth, dyspepsia, GI pain, anorexia, constipation, ileus.
- **GU:** oliguria, renal toxicity, urinary frequency.
- **Hemat:** prolonged bleeding time.
- **Hepat:** transaminases.
- **Hypersensitivity:** anaphylaxis.
- **Misc:** allergic reactions including urticaria.

### Interactions
- **Drug-Disease:** Renal failure.
- **Drug-Drug:**
  - NSAIDs, cyclosporine, radiation therapy, anticoagulants, antineoplastics, or corticosteroids (may increase the risk of toxicity from the NSAID).
  - Aspirin, other NSAIDs, probenecid, diuretics (may increase the risk of bleeding when used with pentoxifylline or clopidogrel).
  - Lithium (may increase the risk of adverse hematologic reactions).
  - Oral anticoagulants (may increase the risk of prothrombin time).
PO (Adults <65 yr): 20 mg initially, followed by 10 mg q 4–6 hr (not to exceed 40 mg/day).

PO (Adults ≥65 yr, <50 kg, or with renal impairment): 10 mg q 4–6 hr (not to exceed 40 mg/day).

PO (Children 2–18 yr, <50 kg): 1 mg/kg as a single dose. No data available for multiple doses.

IM (Adults ≥65 yr): Single dose—60 mg. Multiple dosing—30 mg q 6 hr (not to exceed 120 mg/day).

IM (Adults ≥65 yr, <50 kg, or with renal impairment): Single dose—30 mg. Multiple dosing—15 mg q 6 hr (not to exceed 60 mg/day).

IM (Children 2–18 yr, <50 kg): Single dose—0.4–1 mg/kg (maximum: 15 mg/dose). Multiple dosing—0.5 mg/kg q 6 hr.

Intranasal (Adults ≥65 yr): 1 spray in each nostril q 6–8 hr (not to exceed 4 sprays in each nostril/day).

Intranasal (Adults ≥65 yr, <50 kg, or with renal impairment): 1 spray in only one nostril q 6–8 hr (not to exceed 4 sprays in one nostril/day).

NURSING IMPLICATIONS

Assessment

- Patients who have asthma, aspirin-induced allergy, and nasal polyps are at increased risk for developing hypersensitivity reactions. Assess for rhinitis, asthma, and urticaria.

- Assess for rash periodically during therapy. May cause Stevens-Johnson syndrome or toxic epidermal necrolysis. Discontinue therapy if severe or if accompanied with fever, general malaise, fatigue, muscle or joint aches, chills, oral lesions, conjunctivitis, hepatitis and/or eosinophilia.

- Pain: Assume pain (type, location, and intensity) prior to and 1–2 hr following administration.

- Lab Test Considerations: Evaluate liver function tests, especially AST and ALT, periodically in patients receiving prolonged therapy. May cause changes.

- May cause prolonged bleeding time that may persist for 24–48 hr following discontinuation of therapy.

- May cause BUN, serum creatinine, or potassium concentrations.

Potential Nursing Diagnoses

Acute pain (Indications)

Implementation

- Do not confuse Toradol (ketorolac) with tramadol (Ultram).

- Administration in higher-than-recommended doses does not provide increased effectiveness but may cause increased side effects. Duration of ketorolac therapy, by all routes combined, should not exceed 5 days. Use lowest effective dose for shortest period of time.

- Contraindicated with opioid analgesics may have additive analgesic effects and may permit lower opioid dosages.

- PO: Ketorolac therapy should always be given initially by the IM or IV route. Use oral therapy only as a continuation of parenteral therapy.

IV Administration

- Direct IV:

  Concentration: 15–30 mg/mL. Rate: Administer over at least 15 sec.

  Y-Site Compatibility: alfentanil, amikacin, amphotericin B lipid complex, amphotericin B liposome, anidulafungin, argatroban, ascorbic acid, aztreonam, bevacizumab, benzyl penicillin, bleomycin, bosutinib, bumetanide, buprenorphine, butorphanol, carboplatin, carmustine, cefazolin, cefoperazone, cefotaxime, cefotetan, cefoxitin, ceftazidime, cefuroxime, chloramphenicol, cisplatin, clindamycin, cyanocobalamin, cyclophosphamide, cyclosporine, cytarabine, dactinomycin, daunorubicin, dexmedetomidine, dexmedetomidine hydrochloride, dexmedetomidine hydrochloride, dexamethasone, doxorubicin, docetaxel, dopamine, doxycycline, doxorubicin hydrochloride, epinephrine, etoposide, etoposide phosphate, famotidine, fentanyl, fluconazole, fludarabine, fluorouracil, folic acid, fomelfumigalin, ganciclovir, gemcitabine, gemcitabine phosphate, gentamicin, glycopyrrolate, granisetron, heparin, hydrocortisone, hydromorphone, ifosfamide, imipenem/cilastatin, indomethacin, insulin, irinotecan, isoproterenol, lidocaine, linezolid, lorazepam, magnesium sulfate, mannitol, mechlorethamine, melphalan, methotrexate, methoxsalen, methylprednisolone, metoprolol, metronidazole, methotrexate, methotrexate, mitoxantrone, nelfinavir, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, neflurbide, ne

© 2015 F.A. Davis Company
Continued

Ketorolac

Caution: Discontinue use if serious or life-threatening reactions occur. If renal function is impaired, monitor closely and consider dosage adjustment.

Contraindications: Hypersensitivity to ketorolac or other NSAIDs, active bleeding, severe hypertension.

Adverse Reactions:
- Common: Headache, dizziness, drowsiness, nausea, vomiting, gastric pain, diarrhea, constipation, dry mouth, bloating, increased blood pressure, tinnitus, otitis externa, otitis media, ear pain, sinusitis, rhinitis, pharyngitis, sore throat, cough, dysphonia, sinus pain, nasal congestion, rhinorrhea, conjunctivitis, keratitis, conjunctival injection, retinal detachment,iritis, cataract, abnormal vision, diplopia, nystagmus, dry ocular lubrication, dry eyes.
- Rare: Anaphylaxis, angioedema, flushing, urticaria, edema, rash, pruritus, angina, myocardial infarction, heart failure, dysrhythmias, atrial fibrillation, hypertension, hypotension, syncope, arrhythmias, palpitations, hypovolemic shock, hypovolemia, aortoarteritis, pulmonary edema, pulmonary hemorrhage, asthma, bronchospasm, pleurisy, pneumothorax, pulmonary embolism, pericarditis, pleuritic chest pain, pleural effusion, pericardial effusion, pericardial rub, tachycardia, atrial fibrillation, atrial flutter.

Cautions and Interactions:
- Intermittent or long-term use may result in renal failure.
- Use with caution in patients with peptic ulcer disease.
- Use with caution in patients with hypertension, cardiovascular disease, or hepatic impairment.

Patient/Family Teaching
- Instruct patient to take medication exactly as directed. Take missed doses as soon as remembered, but do not double doses. Do not take more than prescribed or for longer than 5 days.
- May cause drowsiness or dizziness. Advise patient to avoid driving or other activities requiring alertness until response to the medication is known.
- Advise patient to avoid the concurrent use of alcohol, aspirin, NSAIDs, acetaminophen, or other OTC medications without consulting health care professional.
- Advise patient to inform health care professional of medication regimen prior to treatment or surgery.
- Advise patient to consult health care professional if rash, itching, visual disturbances, tinnitus, weight gain, edema, black stools, persistent headache, or influenza-like syndrome occurs.

Evaluation/Desired Outcomes
- Decrease in severity of pain.
- Patients who do not respond to one NSAID may respond to another.

Why was this drug prescribed for your patient?