Oral Ivermectin Therapeutic Cheat Sheet

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TRADE NAME[1-2]

- Stromectol

MECHANISM OF ACTION[1-6]

- Ivermectin selectively binds to glutamate-gated ion channels in invertebrates, increasing chloride ion permeability, leading to paralysis and death of parasites.[4]
- Ivermectin functions as a gamma-aminobutyric acid (GABA) agonist but does not readily cross the blood-brain barrier in humans, ensuring a good safety profile.[3-4]
- Ivermectin suppresses inflammatory response by inhibiting liposaccharide (LPS)-induced cytokine production, reducing levels of tumor necrosis factor alpha (TNF-α), interleukin (IL)-1β, and IL-6.[4-5]

FDA-APPROVED FOR[1-3]

- Gastrointestinal Strongyloidiasis
- Onchocerciasis

OFF-LABEL DERMATOLOGIC USES

- Scabies
- Cutaneous demodicosis
- Refractory body/head lice
- Pediculosis palpebrarum
- Ocular and cutaneous rosacea
- Blepharitis
- Cutaneous larva migrans
- Cutaneous larva currens
- Myiasis
- Cutaneous gnathostomiasis
- Filariasis

DOSING[8]

- Oral ivermectin dosing is variable depending on the condition being treated and the patient's response. Generally, 150-250 mcg/kg as a single dose is recommended, with a repeat dose on day 7 or 14 for scabies and strongyloidiasis.

SIDE EFFECTS[1-3,8]

- Ivermectin is well tolerated, with side effects reported in <4% of patients
  - CNS/Psychiatric Effects
    - Headache, dizziness, somnolence, vertigo, tremor, stupor, coma, seizures
  - Skin Effects
    - Pruritus, urticaria, delayed hypersensitivity reaction ranging from morbilliform rash to severe cutaneous adverse reaction:
      - Severe Cutaneous Reactions
        - Stevens-Johnson Syndrome (SJS)
        - Toxic Epidermal Necrolysis (TEN)
        - Drug Hypersensitivity Syndrome (DHS)
  - Hematological Effects
    - Decreased white blood cell counts, eosinophilia, increased hemoglobin
  - Cardiovascular/respiratory Effects
    - Orthostatic hypotension, tachycardia, peripheral edema, ECG changes, worsening asthma
  - Gastrointestinal Effects
    - Abdominal pain, diarrhea, nausea, vomiting, constipation
  - Hepatic Effects
    - Elevated ALT/AST, hepatitis, elevated bilirubin
  - Other Effects
    - Fatigue, anorexia, asthenia

WARNINGS AND PRECAUTIONS

- Patients treated with ivermectin may experience a Mazzoti reaction, an immunologic response in approximately ~10% of patients treated for onchocerciasis. Symptoms include headache, fevers, myalgia, arthralgia, lymphadenitis, cardiovascular effects, and ocular or skin manifestations including pruritus and various primary and secondary lesions. [2,8] Triggered by antigen release from dying microfilariae,[9] the reaction generally resolves with supportive care and discontinuation of ivermectin.[2]
- A single oral dose of ivermectin may be ineffective in some scabies patients due to its lack of ovocidal action, requiring a second dose to kill newly hatched mites.[6,7]

CONTRAINDICATIONS

- Contraindicated in patients with a history of hypersensitivity to ivermectin or any of its components
- Contraindicated in patients with nervous system disorders.
- Ivermectin is not recommended in children younger than 5 years or less than 15kg in weight due to a theoretical risk of CNS adverse events.[6,8] However, studies have documented its use in this population without major side effects.[4,10]

DRUG INTERACTIONS[1-3]

- Ivermectin may enhance the anticoagulant effects of Vitamin K antagonists (e.g. warfarin).[8]

PREGNANCY AND BREASTFEEDING

- Ivermectin is classified as FDA Pregnancy Category C, and its use during pregnancy is not recommended. Pregnancy status should be confirmed before administering ivermectin to patients who may become pregnant.[8]
  - Prior studies indicate that unintentional ivermectin exposure in mass treatment programs has not been associated with adverse pregnancy outcomes, including abortion or congenital malformations, nor any harmful effects on mothers or their children.[4]
- Ivermectin is excreted in human breastmilk in low concentrations;11 however its clinical significance remains unclear. Treatment should only be considered if the risk of delaying treatment outweighs the potential risk to the newborn.[2]

LAB MONITORING

- No routine laboratory monitoring is required

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