NEXTSTEPS IN DERM | GW School of Medicine & Health Sciences

Topical Metronidazole Therapeutic Cheat Sheet

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TRADE NAME

- MetroCream (Metronidazole cream, 0.75%)
- Noritate (Metronidazole cream, 1%)
- MetroLotion (Metronidazole lotion, 0.75%)
- MetroGel (Metronidazole gel, 1%)

MECHANISM OF ACTION[1-6]

- Metronidazole, a type of nitroimidazole, is a prodrug that becomes activated in organisms with low oxygen levels, resulting in the fragmentation of the imidazole ring and subsequent cytotoxic effects.
- Metronidazole has antiprotozoal, antibacterial, and anti-inflammatory properties. The exact mechanism by which topical metronidazole reduces inflammatory lesions in rosacea is unknown.[1]
- The most common theory for the mechanism of action involves reduction of reactive oxidative tissue injury by modulating neutrophil-generated inflammation.

FDA APPROVED FOR[1-4]

- Inflammatory papules and pustules of rosacea

OFF-LABEL DERMATOLOGIC USES[7]

- Seborrheic dermatitis
- Periorificial dermatitis
- EGFR-inhibitor associated papulopustular eruption
- Foul-smelling wounds
- Topical provocation testing to confirm a diagnosis of FDE and AGEP caused by oral metronidazole

DOSING

- Metronidazole cream, gel, and lotion are for topical use only and patients should apply a thin layer to the affected areas once-twice daily.
  - Studies have demonstrated that for both the 0.75% and 1% formulations, once daily application of topical metronidazole is as effective as twice daily application. Hence, once daily application may provide equal clinical benefit with more tolerability and adherence.[6-7]
  - Studies have demonstrated that although there is significant reduction in papulopustular lesions and perilesional erythema, there is no effect on telangiectasias.[7]

WARNINGS AND PRECAUTIONS[1-6]

- Contact with the eyes should be avoided because topical metronidazole has been reported to cause tearing of the eyes.
- Irritant and allergic contact dermatitis have been reported and patients should discontinue if such a reaction occurs.
- Use with caution in patients with blood dyscrasia.
- There have been reports of peripheral neuropathy in patients receiving systemic metronidazole. While clinical trials for topical metronidazole did not show this side effect, peripheral neuropathy has been noted in post-approval use. The emergence of abnormal neurological symptoms should lead to an immediate reassessment of topical therapy. Metronidazole should be used cautiously in patients with central nervous system diseases.

SIDE EFFECTS[1-5,10]

- Most common side effects include application site reactions (stinging, dryness, burning and itching). In clinical trials, this occurred in < 2% of the patients. Rarely, patients can have aggravation of rosacea or acne.

DRUG INTERACTIONS[1-4]

- There are no known drug interactions with topical metronidazole. However, oral metronidazole has been reported to enhance the anticoagulant effect of warfarin and coumarin, resulting in a longer prothrombin time. Given that topical metronidazole is minimally absorbed systemically, there is a lower likelihood of systemic interactions.

CONTRAINDICATIONS[1-4]

- Contraindicated in patients with a history of hypersensitivity to metronidazole or any ingredients in the formulation.

PREGNANCY AND BREASTFEEDING[5]

- Topical metronidazole is pregnancy risk category B.
  - There are no adequate and well-controlled studies with use of topical metronidazole in pregnant women.
  - Metronidazole is poorly absorbed systemically after topical application, with studies finding mostly undetectable serum concentrations.
- After oral administration, metronidazole is excreted in breast milk at concentrations similar to those in the plasma. Although blood levels are significantly lower with topical metronidazole compared to oral administration, the decision to continue the topical metronidazole vs. breastfeeding should be based on the mother's preference.

MONITORING

- None

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