minocycline (min-oh-sye-klleen)

Dynacin, Minocin, Solodyn

Classification
Therapeutic: anti-infection
Pharmacologic: tetracyclines

Pregnancy Category D

Indications

Action

Pharmacokinetics
Absorption: Well absorbed from the GI tract.
Distribution: Widely distributed, some CP and good bone penetration, crosses the placenta and enters breast milk.
Metabolism and Excretion: <10% excreted unchanged by the urine; some metabolism by the liver with enterohepatic circulation and excretion in bile and feces.
Half-life: 11–26 hr.

TIME/ACTION PROFILE (blood levels)

<table>
<thead>
<tr>
<th>ROUTE</th>
<th>ONSET</th>
<th>PEAK</th>
<th>DURATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>PO</td>
<td>rapid</td>
<td>2–3 hr</td>
<td>6–12 hr</td>
</tr>
<tr>
<td>PO—ER</td>
<td>unknown</td>
<td>3.5–4 hr</td>
<td>24 hr</td>
</tr>
</tbody>
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Contraindications/Precautions
Contraindicated in: Hypersensitivity; Some products contain alcohol or bisulfites and should be avoided in patients with known hypersensitivity or intolerance; Pedi: Children ≤9 yr (permanent staining of teeth); OB: Risk of permanent staining of teeth in infants if used during last half of pregnancy; Lactation: Lactation.

Use Cautiously in: Cachectic or debilitated patients; Renal impairment; Hepatic impairment; Nephrogenic diabetes insipidus.

Adverse Reactions/Side Effects
CNS: benign intracranial hypertension (risk in children), dizziness.
EENT: vestibular reactions.
GI: HEPATOTOXICITY, pseudomembranous colitis, diarrhea, nausea, vomiting, esophagitis, pancreatitis. Drug interactions may increase the risk of hemorrhagic or ulcerative colitis.
Derm: drug rash with eosinophilia and systemic symptoms syndrome, erythema multiforme, Stevens-Johnson syndrome, toxic epidermal necrolysis, photosensitivity, rash, pigmentation of skin and mucous membranes.
Endo: Thyroid disorders.
Hemat: blood dyscrasias.
MS: lupus-like syndrome.
Misc: hypersensitivity reactions, superinfection.

Drug Interactions
Drug-Drug: May q the effect of warfarin. May p the effectiveness of estrogen-containing oral contraceptives. May p the absorption of tetracyclines. Antacids, calcium, iron supplements, and magnesium salts form insoluble compounds (chelates) and p absorption of tetracyclines. Sucralfate may bind to tetracycline and prevent its absorption from the GI tract. Cholestyramine or colestipol p oral absorption of tetracyclines. Adsorbent anti-diarrheals may p absorption.
Drug-Food: Calcium in foods or dairy products p absorption by forming insoluble compounds (chelates).

Route/Dosage
PO (Adults): 100–200 mg initially, then 100 mg q 12 hr or 50 mg q 6 hr.
PO (Children 8 yr): 4 mg/kg initially, then 2 mg/kg q 12 hr.
PO (Adults and Children ≥12 yr [Solodyn]): 126–136 kg—135 mg once daily for 12 wks; 111–125 kg—115 mg once daily for 12 wks; 97–110 kg—105 mg once daily for 12 wks.

TOLERANCE: With long-term therapy, bacterial resistance may develop. Discontinue if superinfection occurs.

Discontinue.
NURSING IMPLICATIONS

Assessment

- Monitor bowel function. Diarrhea, abdominal cramping, fever, and bloody stools should be reported to health care professional promptly as a sign of pseudomembranous colitis. May require up to several weeks following cessation of therapy.

- 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, blisters, oral lesions, conjunctivitis, hepatitis and/or eosinophilia.

- Infection: Assess patient for infection (vital signs, appearance of wound, sputum, urine, and stool; WBC) at beginning of and throughout therapy.

- Obtain specimens for culture and sensitivity before initiating therapy. First dose may be given before receiving results.

- Lab Test Considerations: Monitor renal and hepatic functions and CBC periodically during long-term therapy. May cause increased AST, ALT, serum alkaline phosphatase, bilirubin, and amylase concentrations. May cause increased serum BUN.

- May cause false decreases in urinary catecholamine levels.

Potential Nursing Diagnoses

Risk for infection (Indications) (Side Effects)
Noncompliance (Patient/Family Teaching)

Implementation

- Do not confuse Dynacin with Dynacirc.

- May cause yellow-brown discoloration and softening of teeth and bones if administered prenatally or during early childhood. Not recommended for children under 8 yr of age or during pregnancy or lactation.

- Solodyn product should only be used to treat acne, not to treat infections.

- PO: Administer around the clock. May be taken with food or milk if GI irritation occurs. Administer with a full glass of liquid at least 1 hr before going to bed to avoid esophageal irritation. Swallow extended-release tablets and capsules (Solodyn) whole; do not open, crush, break, or chew. Do not administer within 1–3 hr of other medications.

- Avoid administration of calcium, antacids, magnesium-containing medications, sodium bicarbonate, or iron supplements within 1–3 hr of minocycline.

Patient/Family Teaching

- Instruct patient to take medication around the clock and to finish the drug completely, as directed, even if feeling better. Take missed doses as soon as possible unless almost time for next dose; do not double doses. Advise patient that sharing of this medication may be dangerous.

- Advise patient to avoid taking antacids, calcium, magnesium-containing medications, sodium bicarbonate, and iron supplements within 1–3 hr of oral tetracyclines.

- Commonly causes dizziness or unusual drowsiness. Caution patient to avoid driving or other activities requiring alertness until response to medication is known. Notify health care professional if these symptoms occur.

- Instruct patient to notify health care professional immediately if rash, diarrhea, abdominal cramping, fever, or bloody stools occur and not to treat with antidiarrheals without consulting health care professionals.

- Caution patient to use sunscreen and protective clothing to prevent phototoxic or photodynamic reactions. Advise patient to discontinue medication and notify health care professional at the first sign of skin reaction.

- Advise patient to report signs of superinfection (black, furry overgrowth on the tongue, vaginal itching or discharge; loose or foul-smelling stools). Skin rash, pruritus, and urticaria should also be reported.

- Instruct patient to notify health care professional of medication regimen before treatment or surgery.

- Caution patient to discard outdated or decomposed minocycline; may be toxic.

- Advise female patients to use a nonhormonal method of contraception while taking minocycline and until next menstrual period. Men attempting to father a child should not take minocycline.

- Instruct patient to notify health care professional if symptoms do not improve within a few days for systemic preparations.

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CONTINUED
minocycline

Evaluation/Desired Outcomes

- Resolution of the signs and symptoms of infection. Length of time for complete resolution depends on the organism and site of infection.
- Decrease in acne lesions.

Why was this drug prescribed for your patient?