3.17: Antiprotozoals

Antiprotozoal drugs target infectious protozoans such as Giardia, an intestinal protozoan parasite that infects humans and other mammals, causing severe diarrhea (see Figure 3.14 for a microscopic image of Giardia). [1]

![Giardia lamblia](https://med.libretexts.org/Bookshelves/Nursing/Nursing_Pharmacology_(OpenRN)/03%3A_Antimicrobials/3.17%3A_Antiprotozoals/3.17.1-Giardia-lamblia.png)

**Figure 3.14 Giardia lamblia**

**Indications:** Metronidazole is an example of an antiprotozoal antibacterial medication gel that is commonly used to treat acne rosacea, bacterial vaginosis, or trichomonas. Metronidazole IV is used to treat Giardia and also serious anaerobic bacterial infections such as Clostridium difficile (C-diff).
**Mechanism of Action**: Many antiprotozoal agents work to inhibit protozoan folic acid synthesis, subsequently impairing the protozoal cell. [2]

**Special Administration Considerations**: It can be administered PO, parenterally, or topically. Orally is the preferred route for GI infections. The nurse should monitor the patient carefully for side effects such as seizures, peripheral neuropathies, and dizziness. Psychotic reactions have been reported with alcoholic patients taking disulfiram.

**Patient Teaching & Education**

Patients taking antiprotozoal medications should receive education regarding the need for medication compliance and prevention of reinfection. They should be advised that the medication may cause dizziness and dry mouth. Additionally, the medication may cause darkening of the urine. They should also avoid alcoholic beverages during medication therapy to prevent a disulfiram-like reaction.

If patients are being treated for protozoal infections such as trichomoniasis, they should be advised that sexual partners might be sources of reinfection even if asymptomatic. Partners should also receive treatment. [3]

Patients teaching should include the avoidance of alcohol during therapy.

Now let's take a closer look at the medication grid in Table 3.17. [4]

### Table 3.17 Metronidazole Medication Grid

<table>
<thead>
<tr>
<th>Class/Subclass</th>
<th>Prototype/Generic</th>
<th>Administration Considerations</th>
<th>Therapeutic Effects</th>
<th>Side/Adverse Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antiprotozoal-</td>
<td>metrogel</td>
<td>Check for allergies</td>
<td>Improvement of symptoms</td>
<td>Seizures</td>
</tr>
<tr>
<td>antibacterial</td>
<td>metronidazole IV</td>
<td>Topical, vaginal, PO, or IV</td>
<td></td>
<td>Peripheral neuropathy</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Don’t give by IV push. Infuse over 30 to 60 minutes</td>
<td></td>
<td>Psychotic reactions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Contraindications: pregnancy, hypersensitivity, use of alcohol or disulfiram during therapy</td>
<td></td>
<td>Hepatotoxicity</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Use cautiously with hepatic impairment, blood dyscrasias or CNS diseases</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Critical Thinking Activity 3.17a**

Using the above grid information, consider the following clinical scenario question:

A patient develops C-diff after taking multiple antibiotics for a non-healing wound. What medication is commonly used to treat C-diff, and what route is used?
Note: Answers to the Critical Thinking activities can be found in the “Answer Key” sections at the end of the book.

1. “Giardia lamblia SEM 8698 lores.jpg” by CDC/ Janice Haney Carr is licensed under CC0.
2. This work is a derivative of Microbiology by OpenStax licensed under CC BY 4.0. Access for free at https://openstax.org/books/microbiology/pages/1-introduction.