3.7: Carbapenems

Carbapenems are a beta-lactam “cousin” to penicillins and cephalosporins.

**Indications:** Carbapenems are useful for treating life-threatening, multidrug-resistant infections due to their broad spectrum of activity. These antibiotics are effective in treating gram-positive and gram-negative infections. Because of their broad spectrum of activity, these medications can be especially useful for treating complex hospital-acquired infections or for patients who are immunocompromised.

**Mechanism of Action:** Carbapenems are typically bactericidal and work by inhibiting the synthesis of the bacterial cell wall.

**Specific Administration Considerations:** Carbapenems are similar to cephalosporins. Cross sensitivity may occur in patients allergic to penicillin or cephalosporins.

**Patient Teaching & Education:** Patients should monitor for signs of superinfection and report any occurrence to the provider. If a patient experiences fever and bloody diarrhea, they should contact the provider immediately. The patient should also be advised that side effects can occur even weeks after the medication is discontinued.

Now let’s take a closer look at the medication grid for imipenem in Table 3.7.

<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>Carbapenems</td>
<td>imipenem</td>
<td>Route: IV</td>
<td>Monitor for systemic</td>
<td>Similar to</td>
</tr>
</tbody>
</table>
Check for allergies, including penicillin and cephalosporins

Dosage adjustment if renal impairment

Use with caution with seizure disorder or renal dysfunction

signs of infection: -WBCs

- Fever

Monitor actual site of infection

Monitor culture results, if obtained

Critical Thinking Activity 3.7a

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

John Smith was admitted to the hospital with a serious abdominal infection. The nurse notices that this patient is allergic to penicillin as he prepares to administer the first dose of imipenem medication. What is the nurse’s next best action?

Note: Answers to the Critical Thinking activities can be found in the “Answer Key” sections at the end of the book.


2. uCentral from Unbound Medicine. https://www.unboundmedicine.com/ucentral