### Pre-Operative Considerations

Consider individual risk factors for every patient – need for prophylaxis, drug choice or dose may alter (e.g. immune suppression, presence of prostheses, allergies, obesity, diabetes, remote infection, available pathology or malignancy).

Pre-existing infections (known or suspected) – if present, use appropriate treatment regimen instead of prophylactic regimen for procedure. Doses should be scheduled to allow for re-dosing just prior to skin incision.

### Practice Points

**Drug administration**

- IV bolus – should be timed ≤ 60 minutes before skin incision (optimal 15 to 30 minutes). Commencing administration of any antibiotic after skin incision or completing administration of antibiotics > 60 minutes before incision reduces effectiveness.
- IV infusion – should be commenced 30-60 minutes prior to incision (e.g. metronidazole). See below for vancomycin administration.

**MRSA risk** (defined as history of MRSA colonisation or infection, OR inpatient of metropolitan or other high risk hospital for more than the last five days)

- Add vancomycin (see vancomycin administration below)

**Vancomycin administration**

- Give vancomycin 1g (1.5g for patients > 80kg actual body weight) started 30 to 120 minutes before surgical incision and given at a recommended rate of 1g per hour (1.5g over 90 minutes). Note: infusion can be completed after skin incision.

**Gentamicin administration**

Dosing should be based on ideal body weight, provided ideal body weight is less than actual body weight.

**Repeat doses**

- A single pre-operative dose is sufficient for most procedures, however repeat intra-operative doses are advisable:
  - for prolonged surgery (> 4 hours from the time of first preoperative dose) when a short-acting agent is used (e.g. cefazolin), OR
  - if major blood loss occurs, following fluid resuscitation

**Obese patients**

- Consider increased dose of cefazolin (3g) if patient obese (>120kg). Consult ID for advice.

### Recommended Prophylaxis

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Recommended Prophylaxis</th>
<th>*High risk penicillin/cephalosporin allergy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gastric / duodenal / oesophageal</strong> (bypass, resection, ulcer oversew, oesophagectomy etc)</td>
<td>cefazolin 2g IV (child: 30mg/kg up to 2g) PLUS *metronidazole 500mg IV (child: 12.5mg/kg up to 500mg) High risk of MRSA: ADD vancomycin 1g IV infusion (1.5g for patients &gt; 80kg actual body weight)</td>
<td>vancomycin 1g IV infusion (1.5g for patients &gt; 80kg actual body weight) PLUS *metronidazole 500mg IV (child: 12.5mg/kg up to 500mg)</td>
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<tr>
<td><strong>Biliary (incl. laparoscopic procedures)</strong></td>
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<tr>
<td><strong>Colorectal</strong> (colon/small bowel resection, revision of anastomosis/stoma, appendectomy etc.)</td>
<td>metronidazole 500mg IV infusion (child: 12.5mg/kg up to 500mg) PLUS cefazolin 2g IV (child: 30mg/kg up to 2g) PLUS gentamicin 2mg/kg IV High risk of MRSA: ADD vancomycin 1g IV infusion (1.5g for patients &gt; 80kg actual body weight)</td>
<td>metronidazole 500mg IV infusion (child: 12.5mg/kg up to 500mg) PLUS vancomycin 1g IV infusion (1.5g for patients &gt; 80kg actual body weight) PLUS gentamicin 2mg/kg IV</td>
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<tr>
<td><strong>Pancreatic</strong> (Whipple’s etc.)</td>
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<td><strong>Liver resection</strong></td>
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<tr>
<td><strong>Exploratory laparotomy/division of adhesions</strong></td>
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<tr>
<td><strong>Hernia repair</strong></td>
<td>Prophylaxis NOT recommended when mesh is not inserted</td>
<td></td>
</tr>
<tr>
<td><strong>Hernia repair with mesh insertion</strong></td>
<td>cefazolin 2g (child: 30mg/kg up to 2g) IV High risk of MRSA: ADD vancomycin 1g IV infusion (1.5g for patients &gt; 80kg actual body weight)</td>
<td>vancomycin 1g IV (1.5mg for patients &gt; 80kg actual body weight)</td>
</tr>
</tbody>
</table>
Post-Operative Care

Except where included above, post-operative antibiotics are NOT indicated unless infection is confirmed or suspected, regardless of the presence of surgical drains.

If infection is suspected, consider modification of antibiotic regimen accordingly to clinical condition and microbiological results.

Definitions / Acronyms

DRESS  Drug rash with eosinophilia and systemic symptoms
ID  Infectious Diseases
IV  Intravenous
MRSA  Methicillin-resistant Staphylococcus aureus
SJS / TEN  Stevens-Johnson syndrome / Toxic epidermal necrolysis

* High Risk penicillin/cephalosporin allergy: History suggestive of high risk (eg. anaphylaxis, angioedema, bronchospasm, urticaria, DRESS/SJS/TEN)

References


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