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.

*For patients with cardiac conditions refer to Antibiotic Prophylaxis Guidelines for Prevention of Endocarditis for further information.

Practice Points

Wound irrigation
> Antibiotic solutions should NOT be used to irrigate the wound during surgery

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 – vancomycin infusion should be commenced 30-120 minutes prior to incision. See vancomycin administration below.

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 to cefazolin (see vancomycin administration below)

Vancomycin administration
> Give vancomycin 1g (1.5g for patients >80kg actual body weight) by IV infusion started 30-120 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.

Repeat doses
A single pre-operative dose is sufficient for most procedures; however, repeat intra-operative doses are advisable:
> for prolonged surgery (> 3 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 is obese (>120kg). Consult ID for advice.

Recommended Prophylaxis

<table>
<thead>
<tr>
<th>Recommended Prophylaxis</th>
<th>*High risk penicillin/cephalosporin allergy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Craniotomy procedures</td>
<td>cefazolin 2g IV(child: 30mg/kg up to 2g)</td>
</tr>
<tr>
<td>Trans-sphenoidal procedures</td>
<td>cefazolin 2g IV(child: 30mg/kg up to 2g)</td>
</tr>
<tr>
<td>Spinal procedures (laminectomy)</td>
<td>High risk of MRSA: ADD vancomycin 1g IV infusion (1.5g for patients &gt; 80kg actual body weight)</td>
</tr>
<tr>
<td>CSF shunt / drain procedures</td>
<td>cefazolin 2g IV(child: 30mg/kg up to 2g)</td>
</tr>
<tr>
<td>External ventricular drain shunt</td>
<td>cefazolin 2g IV(child: 30mg/kg up to 2g)</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 according to clinical condition and microbiological results.

Definitions / Acronyms

CSF  Cerebrospinal fluid
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


Endorsed by South Australian expert Advisory Group on Antibiotic Resistance (SAAGAR) March 2012, Last reviewed and amended August 2017

SAAGAR has endeavored to ensure that the information in this publication is accurate; however, it makes no representation or warranty to this effect.

You rely on this publication at your own risk. SAAGAR disclaims all liability for any claims, losses, damages, costs and expenses suffered or incurred as a result of reliance on this publication. As the information in this publication is subject to review, please contact a medical or health professional before using this publication.