

# Surgical Antibiotic Prophylaxis Guidelines

## Neurosurgery

### 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

	Recommended Prophylaxis	*High risk penicillin/cephalosporin allergy
<b>Craniotomy procedures</b>	<b>cefazolin 2g</b> IV(child: 30mg/kg up to 2g)  <u>High risk of MRSA :</u> <b>ADD vancomycin 1g</b> IV infusion (1.5g for patients > 80kg <b>actual body weight</b> )	<b>vancomycin 1g</b> IV infusion (1.5g for patients > 80kg <b>actual body weight</b> )
<b>Trans-sphenoidal procedures</b>		
<b>Spinal procedures</b> (laminectomy)		
<b>CSF shunt / drain procedures</b>		
<b>External ventricular drain shunt</b>		
<b>Other minor clean procedures</b>	Prophylaxis NOT recommended	

### 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

<b>CSF</b>	Cerebrospinal fluid
<b>DRESS</b>	Drug rash with eosinophilia and systemic symptoms
<b>ID</b>	Infectious Diseases
<b>IV</b>	Intravenous
<b>MRSA</b>	Methicillin-resistant <i>Staphylococcus aureus</i>
<b>SJS / TEN</b>	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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