

# Surgical Antibiotic Prophylaxis Guidelines

## Vascular Surgery

### 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, urinary catheters or stents, 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  $\leq$  60 minutes before skin incision (optimal 30 minutes). Administration after skin incision or  $>$  60 minutes before incision reduces effectiveness
- > IV infusion – should be commenced 30-60 30 minutes prior to skin incision (e.g. metronidazole). See below for vancomycin administration

**MRSA risk** (defined as history of MRSA colonisation or infection, OR inpatient of high risk hospital or unit (where MRSA is endemic) 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, starting 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 ( $>$  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 is obese ( $>$ 120kg). Consult ID for advice.

### Recommended Prophylaxis

	Recommended Prophylaxis	*High risk penicillin/cephalosporin allergy
<b>Vascular reconstruction</b> (e.g. abdominal aorta, graft/stent insertion, groin incision)	<b>cefazolin 2g IV</b> (child: 30mg/kg up to 2g), repeated 8-hourly for 2 further doses post-operatively  <u>High risk of MRSA :</u> <b>ADD vancomycin 1g IV</b> infusion (1.5g for patients $>$ 80kg <b>actual body weight</b> )	<b>vancomycin 1g IV</b> infusion (1.5g $>$ 80kg <b>actual body weight</b> ), may repeat 12 hours after initial dose
<b>Amputation of ischaemic limb</b>	<b>cefazolin 2g IV</b> (child: 30mg/kg up to 2g) repeated 8-hourly for 2 further doses post-operatively  PLUS  <b>metronidazole 500mg IV</b> infusion (child: 12.5mg/kg up to 500mg), repeated 12 hours after initial dose  <u>High risk of MRSA :</u> <b>ADD vancomycin 1g IV</b> infusion (1.5g for patients $>$ 80kg <b>actual body weight</b> )	<b>vancomycin 1g IV</b> infusion (1.5g $>$ 80kg <b>actual body weight</b> ), repeated 12 hours after initial dose  PLUS  <b>metronidazole 500mg IV</b> infusion (child: 12.5mg/kg up to 500mg), repeated 12 hours after initial dose
<b>Primary autogenous arteriovenous fistula (AVF) formation</b>	<b>No prophylaxis required</b>	
<b>AVF revision or AVF with insertion of prosthetic material (e.g Dacron graft)</b>	<b>cefazolin 2g IV</b> (child: 30mg/kg up to 2g)  <u>High risk of MRSA :</u> <b>ADD vancomycin 1g IV</b> infusion (1.5g for patients $>$ 80kg <b>actual body weight</b> )	<b>vancomycin 1g IV</b> infusion (1.5g $>$ 80kg <b>actual body weight</b> )
All other <b>clean procedures</b> (e.g. thoracoscopic sympathectomy)	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 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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