Surgical Antibiotic Prophylaxis Guidelines

CVIU / Cardiology Procedures

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 30-120 minutes prior to incision (e.g.vancomycin). See vancomycin administration below.

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 5 days)

> Add vancomycin to cefazolin (see vancomycin administration below)

Vancomycin administration

> Give vancomycin 1g (1.5g for patients > 80kg **actual body weight**) starting the infusion 30 to 120 minutes before surgical incision and given at a recommended rate of 1g per hour (1.5g over 90 minutes)

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 (2 g cefazolin) 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 higher doses of cefazolin (3g) if patient morbidly obese (>120kg). Consult ID for advice.

Recommended Prophylaxis

	Recommended Prophylaxis	*High risk penicillin/cephalosporin allergy
Permanent pacemaker/defibrillator insertion	**cefazolin 2g IV (child: 30mg/kg up to 2g)** PLUS In patients with high MRSA risk, repeat procedures, poor skin integrity, anticipated difficult procedure, or recent (within last 3 months) antibiotic treatment: ADD **vancomycin 1g** IV infusion (1.5g for patients > 80kg **actual body weight**)	**vancomycin 1g I**V infusion (1.5g for patients > 80kg **actual body weight)** PLUS **gentamicin 2mg/kg** IV
Routine angioplasty, stent insertion	Prophylaxis NOT recommended	
Valvuloplasty, septal occlusion for high risk patients only (e.g. femoral catheter > 6hrs, prosthetic valves, past history of endocarditis, atrial septal defect closure device insertion)	**cefazolin 2g** IV, then 8 hourly for up to 2 further doses PLUS **vancomycin 1g** IV infusion (1.5g for patients > 80kg **actual body weight**)	**vancomycin 1g** IV infusion (1.5g for patients > 80kg **actual body weight**) PLUS **gentamicin 5mg/kg I**V

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 microbiology results.

Definitions / Acronyms

CVIU	Cardiovascular investigational unit
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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