

VICNISS COMMON PROCEDURE GROUPS: SURGICAL ANTIBIOTIC PROPHYLAXIS (SAP) RECOMMENDATIONS¹

¹Therapeutic Guidelines: Antibiotic Version 16 2019 (available from Victorian health services via “Clinicians Health Channel”)

Surgical antibiotic prophylaxis (SAP) appropriateness takes into consideration compliance with:

- 1) antibiotic choice, dose, route
- 2) timing
- 3) duration

1. Antibiotic choice, dose, route

Antibiotic choice is compliant with Therapeutic Guidelines: Antibiotics (**Table 3**) or expert group consensus*.

Antibiotic choices are given for first-line prophylaxis, if prophylaxis for multiresistant organism (MRO) required or if patient has a hypersensitivity to penicillins.

For specific indications, if the patient is already receiving antibiotic treatment for an established infection, it is not necessary to give additional antibiotic prophylaxis provided

- 1) antibiotic treatment regimen has activity against the organism(s) most likely to cause postoperative infection
- 2) timing of the treatment dose is sufficient to achieve adequate plasma and tissue concentrations at the time of surgical incision and for the duration of the procedure (**Table 2**)

2. Timing

Antibiotic prophylaxis must be administered before surgical incision to achieve effective plasma and tissue concentrations.

Re-dosing: For long procedures (>3 to 4 hours), repeat intraoperative doses are recommended (**Table 2**).

Short acting IV antibiotics (e.g. cefazolin) should be administered within 60 minutes before surgical incision.

Longer-acting IV antibiotics (e.g. vancomycin) should be administered within 120 minutes and no less than 15 minutes prior to the surgical incision.

3. Duration

For the vast majority of clean and clean-contaminated procedures, prophylactic antibiotics are not required after surgical incision closure.

For a minority of procedures, there are inadequate data to show that a single dosing is as effective as 24 hours of prophylaxis.

For these procedures (**Table 3**), postoperative doses can be considered but should not continue beyond 24 hours.

*Expert group consensus – Infectious Diseases, AMS Pharmacist and microbiologist consensus group adjudications

Table 1: Antibiotic timing pre-incision and intra-operative redosing (Based on Therapeutic Guidelines: Antibiotics (accessed July 2020))

Table 1: Antibiotic timing pre-incision and intra-operative redosing	Timing pre-incision	Intra-operative redosing
Cefazolin	Within 60 min	Repeat if more than 3-4 hours since previous dose
Cefoxitin	Within 60 min	Repeat if more than 2 hours since previous dose
Clindamycin IV	Within 120 min	Not required
Gentamicin	Within 120 min	Not required
Metronidazole IV	Within 120 min	Not required
Vancomycin	Within 120 min but no less than 15 min	Not required

Table 2 - Surgical antibiotic prophylaxis: Timing of redosing interval for commonly used agents

Based on Therapeutic Guidelines: Antibiotics (accessed July 2020) and expert consensus*

VICNISS Surgical prophylaxis : Compliance with re-dosing - If long procedure (eg >4 hours) - If patient already on treatment <i>Timing must be sufficient to cover incision and expected duration of surgical procedure</i>	Time interval for re-dosing - Therapeutic Guidelines: Antibiotics [1] - Expert group consensus [2] *
Amoxicillin IV	4h (consistent with cefazolin) [2] ³
Ampicillin IV	4h (consistent with cefazolin) [2] ³
Amoxicillin + clavulanate IV	Redose ampicillin/amoxicillin component at 4h, then redose amoxicillin-clavulanate as normal at 8h mark [2] Accept redose amoxicillin-clavulanate at 4h mark [2] <i>If redosing amoxicillin-clavulanate more frequently, caution should be taken as high cumulative parental doses may lead to electrolyte disturbances and neurotoxicity</i>
Cephalothin	2h [2]
Cefazolin	4h [1]
Cefepime	6h [2]
Cefoxitin	2h [1]
Cefotaxime	6h [2]
Ceftazidime	6h [2]
Ceftriaxone	12h [2]
Ciprofloxacin IV	8h [2]
Clindamycin IV	6h [1]
Flucloxacillin IV	4h [2]
Metronidazole oral	12h [2]
Metronidazole IV	12h [1]
Moxifloxacin IV	24h [2]
Piperacillin+tazobactam	4h [2] <i>If redosing piperacillin+tazobactam more frequently, caution should be taken as high cumulative parental doses may lead to electrolyte disturbances and neurotoxicity</i>
Trimethoprim + sulfamethoxazole IV	Accept 12h, 8h, 6h [2]
Vancomycin IV	12h [1]

*Expert group consensus – Infectious Diseases, AMS Pharmacist and microbiologist consensus group adjudications

References

1. Therapeutic Guidelines: Antibiotics Version
2. Dale W. Bratzler, E. Patchen Dellinger, Keith M. Olsen, Trish M. Perl, Paul G. Auwaerter, Maureen K. Bolon, Douglas N. Fish, Lena M. Napolitano, Robert G. Sawyer, Douglas Slain, James P. Steinberg, Robert A. Weinstein, Clinical practice guidelines for antimicrobial prophylaxis in surgery, *American Journal of Health-System Pharmacy*, Volume 70, Issue 3, 1 February 2013, Pages 195–283.
3. American Society of Health-System Pharmacists & Infectious Diseases Society of America "Clinical Practice Guidelines for Antimicrobial Prophylaxis in Surgery," 2013 <https://www.ashp.org/surgical-guidelines>

