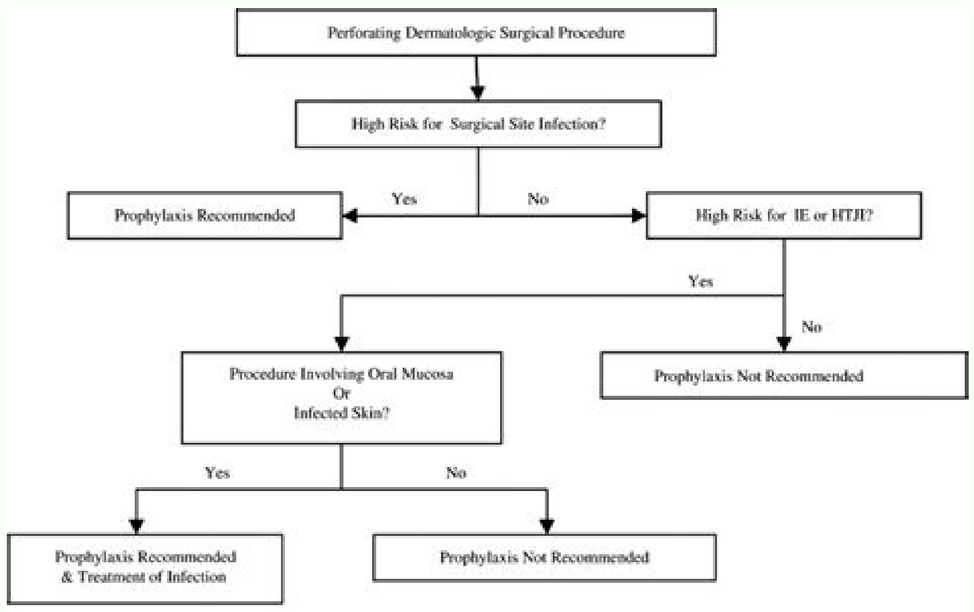
Surgery prophylactic antibiotics guidelines

Continue

Table 2. *(continued)*

Type of Procedure	Recommended Agents[A,B]	Alternative Agents in Patients with β-Lactam Allergy	Strength of Evidence[C]
Implantation of internal fixation devices (e.g., nails, screws, plates, wires)	Cefazolin	Clindamycin,[E] vancomycin[E]	C
Total joint replacement	Cefazolin	Clindamycin,[E] vancomycin[E]	A
Urologic			
Lower tract instrumentation with risk factors for infection (includes transrectal prostate biopsy)	Fluoroquinolone,[D,I] trimethoprim-sulfamethoxazole, cefazolin	Aminoglycoside[F] with or without clindamycin	A
Clean without entry into urinary tract	Cefazolin (the addition of a single dose of an aminoglycoside may be recommended for placement of prosthetic material [e.g., penile prosthesis])	Clindamycin,[E] vancomycin[E]	A
Involving implanted prosthesis	Cefazolin ± aminoglycoside, cefazolin ± aztreonam, ampicillin-sulbactam	Clindamycin ± aminoglycoside or aztreonam, vancomycin ± aminoglycoside or aztreonam	A
Clean with entry into urinary tract	Cefazolin (the addition of a single dose of an aminoglycoside may be recommended for placement of prosthetic material [e.g., penile prosthesis])	Fluoroquinolone,[D,I] aminoglycoside[F] with or without clindamycin	A
Clean-contaminated	Cefazolin + metronidazole, cefoxitin	Fluoroquinolone,[D,I] aminoglycoside[F] + metronidazole or clindamycin	A
Vascular[K]	Cefazolin	Clindamycin,[E] vancomycin[E]	A
Heart, lung, heart-lung transplantation[K]			
Heart transplantation[I]	Cefazolin	Clindamycin,[E] vancomycin[E]	A (based on cardiac procedures)
Lung and heart-lung transplantation[I,K]	Cefazolin	Clindamycin,[E] vancomycin[E]	A (based on cardiac procedures)
Liver transplantation[K,I]	Piperacillin-tazobactam, cefotaxime + ampicillin	Clindamycin or vancomycin + aminoglycoside[F] or aztreonam or fluoroquinolone[D,I]	B
Pancreas and pancreas-kidney transplantation[I]	Cefazolin, fluconazole (for patients at high risk of fungal infection [e.g., those with enteric drainage of the pancreas])	Clindamycin or vancomycin + aminoglycoside[F] or aztreonam or fluoroquinolone[D,I]	A



IE = Infective Endocarditis, HTJI = Hematogenous Total Joint Infection

ANTIBIOTIC REGIMENS:

Prevention of Surgical Site Infection:

A) Wedge excisions of the lip and ear, skin flaps on the nose, and skin grafts

Cephalexin 2 g p.o.
If PCN allergic, Clindamycin 600 mg p.o. or
Azithromycin/clarithromycin 500 mg p.o

B) Lesions in the groin & Lower extremity

Cephalexin 2 grams p.o.
If PCN allergic, TMP-SMX DS one tab p.o. or
Levofloxacin 500 mg p.o.

Prevention of IE, HTJI :

A) Non-Oral Surgical Site

Cephalexin 2 grams p.o.
If PCN allergic, Clindamycin 600 mg p.o. or
Azithromycin or clarithromycin 500 mg p.o.

B) Oral Surgical Site

Amoxicillin 2 grams p.o.
If PCN allergic, Clindamycin 600 mg p.o. or
Azithromycin/clarithromycin 500 mg p.o

Note: -AHA recommends 30-60 minutes preoperative dosing, ADA-AAOS recommends 60 minutes preoperative dosing.
-For patients with PCN allergy and unable to take PO medication refer to Wright et al Tables III and VI.
-Treat any skin infection or SSI aggressively.
-We do not recommend prophylaxis for curettage & cryotherapy or electrodessication & cryotherapy.
-Be familiar with the risk of MRSA in your community.
-If you are in a community with increased risk of MRSA, consider SSI/IE/HTJI prophylaxis with: Combination of TMP/SMX DS one tab and PEN VK p.o. OR Clindamycin 600 mg p.o.

HIGH RISK INDICATIONS:

For Surgical Site Infection:

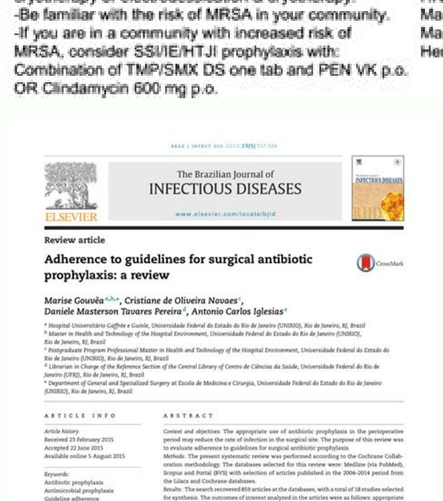
Lower extremity, especially leg
Groin
Wedge excision of the lip or ear
Skin flaps on nose
Skin grafting
Extensive inflammatory skin disease

For Infective Endocarditis:

Prosthetic cardiac valve
Previous Infective Endocarditis
Congenital Heart Disease (CHD):
Unrepaired cyanotic CHD, including palliative shunts and conduits
Completely repaired congenital heart defects with prosthetic material or device, whether placed by a surgery or a catheter intervention, during the first 6 months after the procedure
Repaired CHD with residual defects at the site or adjacent to the site of a prosthetic patch or prosthetic device (which inhibit endothelialization)
Cardiac transplantation recipients who develop cardiac valvulopathy

For Hematogenous Total Joint Infection:

First 2 years following joint placement
Previous prosthetic joint infections
Immunocompromised/Immunosuppressed patients
Inflammatory arthropathies such as rheumatoid arthritis, systemic lupus erythematosus
Drug-, or radiation induced immunosuppression
Insulin Dependent (Type 1) Diabetes
HIV Infection
Malignancy
Malnourishment
Hemophilia



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Review article

Adherence to guidelines for surgical antibiotic prophylaxis: a review

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ABSTRACT

Context and objectives: The appropriate use of antibiotic prophylaxis in the perioperative period may reduce the rate of infection in the surgical site. The purpose of this review was to evaluate adherence to guidelines for surgical antibiotic prophylaxis.
Methods: The present systematic review was performed according to the Cochrane Collaboration methodology. The databases selected for this review were: Medline (via PubMed), Scopus and Portal (BVS) with selection of articles published in the 2004–2014 period from the Lilacs and Cochrane databases.
Results: The search recovered 859 articles at the databases, with a total of 18 studies selected for synthesis. The outcomes of interest analyzed in the articles were as follows: appropriate indication of antibiotic prophylaxis (ranging from 70.3% to 95%), inappropriate indication (ranging from 2.3% to 100%), administration of antibiotic at the correct time (ranging from 12.73% to 100%), correct antibiotic choice (ranging from 22% to 95%), adequate discontinuation of antibiotic (ranging from 5.8% to 91.4%), and adequate antibiotic prophylaxis (ranging from 0.3% to 84.5%).
Conclusions: Significant variations were observed in all the outcomes assessed, and all the studies indicated a need for greater adherence to guidelines for surgical antibiotic prophylaxis.

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Type of Operation	Likely Pathogens	Recommended Prophylaxis Regimen[a]	Comments	Grade of Recommendation[b]
Orthopedic Surgery				
Joint replacement	*S. aureus, S. epidermidis*	Cefazolin 1 g × 1 preoperatively, then every 8 hours × 2 more doses	Vancomycin reserved for penicillin-allergic patients or where institutional prevalence of methicillin-resistant *S. aureus* warrants use	IA
Hip fracture repair	*S. aureus, S. epidermidis*	Cefazolin 1 g × 1 preoperatively, then every 8 hours for 48 hours	Compound fractures are treated as if infection is presumed	IA
Open/compound fractures	*S. aureus, S. epidermidis,* gram-negativebacilli, polymicrobial	Cefazolin 1 g × 1 preoperatively, then every 8 hours for a course of presumed infection	Gram-negative coverage (i.e., gentamicin) often indicated for severe open fractures	IA
Neurosurgery				
CSF shunt procedures	*S. aureus, S. epidermidis*	Cefazolin 1 g every 8 h × 3 doses or ceftriaxone 2 g × 1	No agents have been shown to be better than cefazolin in randomized comparative trials	IA
Craniotomy	*S. aureus, S. epidermidis*	Cefazolin 1 g × 1 or cefotaxime 1 g × 1	IV × 1 can be substituted for patients with penicillin allergy Trimethoprim–sulfamethoxazole (160/800 mg)	IA
Spinal surgery	*S. aureus, S. epidermidis*	Cefazolin 1 g × 1	Limited number of clinical trials comparing different treatment regimens	IB

[CSF, cerebrospinal fluid; DS, double strength.

[a]One-time doses are optimally infused at induction of anesthesia except as noted. Repeat doses may be required for long procedures. See the text for references.
[b]Strength of recommendations:
Category IA: Strongly recommended and supported by well-designed experimental, clinical, or epidemiologic studies.
Category IB: Strongly recommended and supported by some experimental, clinical, or epidemiologic studies and strong theoretical rationale.
Category II: Suggested and supported by suggestive clinical or epidemiologic studies or theoretical rationale.

TABLE I. Distribution of patients into various surgical classes and protocol of antibiotics in the routine or trial groups.

Class A: Clean: (herniotomies, orchidopexies, etc.)
Routine group: 3-5 days of oral antibiotics.
Trial group: No antibiotics.

Class B: Clean-contaminated (also major soft tissue/bone and joint op.*): (cleft lip and palate, thoracic surgery, op. on stomach and duodenum, TEV, etc.).
Routine group: Injectables 1-2 days, then oral.
Trial group: One per-operative dose only.

Class C: Contaminated: (Large gut and urinary tract operations, anaplasty, etc.).**
Routine group: Injectables and/or oral for 7-10 days.
Trial group: Per-operative antibiotics for a max. of 48 hours.

***Major soft tissue/bone and joint added here because of recommendation of one per-operative dose in such cases, similar to that of clean-contaminated cases[1,14,15].**
****Most of urinary tracts operated were obstructed, hence their inclusion in class C.**

Who surgical antibiotic prophylaxis guidelines 2018. Cdc guidelines prophylactic antibiotics surgery. Surgical antibiotic prophylaxis guidelines 2021. Guidelines for prophylactic antibiotics prior to surgery. Prophylactic antibiotics in orthopaedic surgery guidelines and practice. Guidelines for the use of prophylactic antibiotics in surgery in taiwan. Who guidelines for antibiotic prophylaxis in surgery.

This page is in the process of being updated AGENCIES European Centre for Disease Prevention and Control (ECDC) PROFESSIONAL SOCIETIES American Society of Health-System Pharmacists (ASHP) / Infectious Diseases Society of America (IDSA) / Surgical Infection Society (SIS) / Society for Healthcare Epidemiology of America (SHEA) American Society for Gastrointestinal Endoscopy (ASGE) Antibiotic prophylaxis for gastrointestinal endoscopy (2015) Global Alliance for Infections in Surgery Principles of antibiotic prophylaxis in surgery – multiple languages (2019) EU/EEA COUNTRIES Croatia Cyprus France Italy Lithuania Luxembourg Prophylactic use of antibiotics in surgery (Scientific Council- Health Domain, 2009) Utilisation prophylactique des antibiotiques en chirurgie (Conseil Scientifique - Domaine de la Santé, 2009) Netherlands Slovakia Sweden Postoperative wound infections have an enormous impact on patients' quality of life and contribute substantially to the financial cost of patient care. The potential consequences for patients range from increased pain and care of an open wound to sepsis and even death. Approximately 1 million patients have such wound infections each year in the United States, extending the average hospital stay by one week and increasing the cost of hospitalization by 20 percent.1 This translates to an additional $1.5 billion in health care costs annually.2 The occurrence of wound infection requires a local inoculum sufficient to overcome host defenses and establish growth. The process is complex and depends on the interaction of various host, local tissue and microbial virulence factors. Measures intended to prevent wound infection typically attempt to modify the host and local tissue factors and include, for example, preoperative optimization of comorbid illness, control of the operative environment, proper cleansing of the skin and use of aseptic surgical technique. Antibiotic prophylaxis is only one relatively minor effort among numerous preventive measures, but the efficacy and impact of antimicrobial

prophylaxis has clearly been demonstrated to be significant.3,4 Attention to surgical wounds is exemplified historically by attending to gunshot wounds with a creechle of worms, rose oil and moss from the skull of a mummy collected at full moon (certain references indicate that this boiling concoction was incomplete without the addition of fresh puppies). Ambroise Paré's use of egg yolk, rose oil and turpentine (not boiled) was regarded as progressive. In the 1600s, wound infection was so common that redness, warmth and purulence were thought to be desirable features of wound healing. Despite the documented efficacy of handwashing in reducing puerperal sepsis in the mid-1800s, which was introduced by Semmelweis and popularized by Holmes, the widespread practice of handwashing for the surgical team was not established until the early 20th century. The practical source of the belief in “laudable pus” is likely based on the fact that only living patients produced pus. Major surgery was almost invariably followed by infectious complications, typified by erysipelas, rapidly progressive soft tissue infections (streptococcal or mixed synergistic infections) and tetanus. Associated mortality was high. The introduction of carbolic acid spray (used on the entire operating room, patient and surgeons) by Lister in 1867 led to a dramatic reduction in infection rates to less than 10 percent. Nevertheless, the “antiseptic principle” was not widely accepted. Lister's results, however, fostered a context more accepting of Pasteur's theory of putrefaction: purulence was caused by microorganisms. After the adoption of handwashing and the use of sterile gloves, gowns and supplies (autoclave), infection rates for clean procedures approached modern rates. However, infection rates for procedures of the gastrointestinal tract remained high as a result of the endogenous origin of the bacteria. Following the introduction of antibiotics, early clinical trials in the 1950s reported either no benefit or a higher infection rate with antibiotic prophylaxis.5–7 Moreover, the emergence of resistant strains was attributed, in part, to such use of antibiotics. Although a small number of authors supported the use of prophylactic antibiotics for “dirty” or contaminated cases, most did not recommend their use in cleaner cases. Fortunately, studies by Burke in the early 1960s revealed the critical flaw in previous investigations and clinical failures.8 Burke administered a single dose of penicillin systemically at various times before and after the inoculation of penicillin-sensitive Staphylococcus aureus in the dermis of guinea pigs. Administration of antibiotic either shortly before or after the inoculation of organisms resulted in lesions histologically identical to lesions induced by intradermal inoculation with killed organisms. Delaying the administration of antibiotic by as little as three hours resulted in lesions identical to those in animals not receiving antibiotics. The critical dependence of prophylactic efficacy on timing of administration was soundly established and subsequently shown to depend on the presence of peak antibiotic levels in the tissue at a time when the local concentration of microorganisms would otherwise be high. Subsequent investigation has focused on the delineation of specific procedures, prophylactic regimens and the optimization of efficacy. Surgical Procedure Classification and Consideration of Specific Risk Factors Establishing a “prophylaxis indicated” status for a given procedure requires consideration of the likelihood of infection without antibiotics and the morbidity and cost of an infectious complication. The discussion of these issues is facilitated by a taxonomy that classifies a procedure according to the level of microbial contamination routinely associated with that procedure and the likelihood of infection. Criteria are based on clinical information defined by the National Academy of Sciences, National Research Council (NRC), Division of Medicine, Ad Hoc Committee on Trauma.9 The classification is provided in Table 1. The incidence of infection ranges widely across classes—less than 2 percent for clean procedures (e.g., breast biopsy) to over 40 percent for dirty procedures (colon perforation with diffuse fecal contamination). It is generally agreed that antibiotic prophylaxis is warranted in all procedures in the categories of clean-contaminated, contaminated or dirty. The argument against prophylaxis for clean procedures, based on the intrinsically low rate of infection without antibiotic treatment, is overly simplistic for several reasons. For specific clean procedures, infection may be unlikely, but the morbidity and cost of even infrequent infection can justify the use of prophylaxis. An example is the insertion of prosthetic devices, such as heart valves or joints. Also, clean procedures constitute approximately 60 percent of all surgical procedures and account for approximately 40 percent of all wound infections.10 It is estimated that prophylaxis for clean procedures would reduce the overall incidence of wound infection by 17 percent.11 Moreover, certain risk factors not addressed by the NRC scheme have been correlated with markedly increased rates of infection for all classes of procedures. Table 2 provides a general list of risk factors without reference to numeric incremental risk. A prospective study12 of over 9,000 patients identified three independent factors not related to NRC criteria: remote infection, lengthy operations and a diagnosis of diabetes. Similarly, abdominal operations, procedures lasting more than two hours and the presence of three comorbid medical conditions were identified as independent and additive risk factors.13 The presence of two factors increased the risk of infection for clean wounds fourfold, to over 8 percent. This led to the formulation of a risk index that may be completed with preoperative information.10 The index is based on the American Society of Anesthesiologists' preoperative assessment score (3, 4 or 5); classification of the procedure as contaminated or dirty, and length of operation exceeding the 75th percentile for that specific procedure. The efficacy of modifying prophylactic regimens for patients without full immunocompetence (for example, patients with advanced malignancy or those infected with human immunodeficiency virus [HIV]) has not been adequately evaluated. Therefore, until further information is available, these patients should be regarded in the context of currently defined risk factors. Selection and Administration of Antibiotics An appropriate prophylactic antibiotic should (1) be effective against microorganisms anticipated to cause infection; (2) achieve adequate local tissue levels; (3) cause minimal side effects; (4) be relatively inexpensive, and (5) not be likely to select virulent organisms. The microbial context of the wound and the hospital environment may influence the choice of antibiotic, but coverage should primarily target those organisms known to cause postoperative infection. Species of Staphylococcus may cause infection in the majority of procedures that do not violate mucosa or a hollow viscus. In general, a first-generation cephalosporin fulfills these criteria and is regarded as sufficient prophylaxis for the majority of procedures. The most commonly administered drug is cefazolin (Ancef, Kefzol). For procedures of the alimentary tract, genitourinary tract and hepatobiliary system, coverage should be additionally influenced by site-specific flora, such as gram-negative and anaerobic microorganisms. In such cases, cefotetan (Cefotan) or cefoxitin (Mefoxin) is a suitable agent. For patients with documented allergy to cephalosporins, vancomycin (Vancocin) is a reasonable alternative for coverage of Staphylococcus, and metronidazole (Flagyl) or clindamycin (Cleocin) and an aminoglycoside may be used for coverage of anaerobic and gram-negative organisms, respectively. Aztreonam (Azactam) can be combined with clindamycin but not with metronidazole in the same setting.14 A quinolone, such as ciprofloxacin (Cipro), may also be effective for coverage of gram-negative organisms, although data for the context of prophylaxis are not available. Timing of administration is critical. The drug should be administered ideally within 30 minutes and certainly within two hours of the time of incision.15 The first dose should always be given before the skin incision is performed. For longer procedures, readministration of the drug is indicated at intervals of one or two times the half-life of the drug (using the same dose).4,16 This ensures adequate tissue levels throughout the duration of the procedure. Table 3 lists the half-lives of commonly used antibiotics. The duration of an adequate tissue level of the antibiotic need not exceed the operative period. The duration of administration is extended only in special circumstances, such as gross contamination secondary to a ruptured viscus or severe trauma. The available data provide no evidence for the efficacy of extending coverage to 24 to 48 hours in such contexts.17 Recommendations for Specific Categories of Procedures Prophylaxis is indicated for all procedures not classified as clean. As previously qualified, certain risk factors justify the use of prophylaxis for clean procedures as well. The following recommendations are provided for specific procedures. A recent quality standards report that further qualifies the strength of recommendations based on the quality of available supporting evidence is also useful.4 Cutaneous and Superficial Soft Tissue Procedures Prophylaxis is not indicated for cutaneous and superficial soft tissue procedures. For patients with two or more significant risk factors (Table 2), prophylaxis is acceptable but not strongly indicated. Traumatic wounds require consideration of the status of the patient's tetanus vaccination. Although a single dose of antibiotic is acceptable, mechanical cleansing and adherence to guidelines for open management of wounds created more than 12 hours before treatment are the essential elements of prophylaxis. For procedures entailing entry into the oropharynx or esophagus, coverage of aerobic cocci is indicated. Prophylaxis has been shown to reduce the incidence of severe wound infection by approximately 50 percent.18,19 Either penicillin or cephalosporin-based prophylaxis is effective. Cefazolin is commonly used. Prophylaxis is not indicated for dentoalveolar procedures, although prophylaxis is warranted in immunocompromised patients undergoing these procedures. Studies evaluating the efficacy of antibiotic prophylaxis in neurosurgical procedures have shown variable results. The supportive data have recently been reviewed.18,20 Nonetheless, prophylaxis is currently recommended for craniotomy and shunt procedures. Coverage targets S. aureus or Staphylococcus epidermidis. Various regimens have been assessed, ranging from combinations of cefazolin and gentamicin (Garamycin) to single-agent therapy with cefazolin, vancomycin, piperacillin (Pipracil, Zosyn) and cloxacillin (Cloxapen, Tegapen). No particular regimen has been clearly demonstrated to be superior. Until further data are available, therapy with cefazolin is considered appropriate. General Thoracic Procedures Prophylaxis is routinely used for nearly all thoracic procedures, despite the lack of available supportive evidence (most evidence is based on studies of pulmonary resection for lung cancer).21,22 In general, the strength of the recommendation is proportionate to the likelihood of encountering high numbers of microorganisms during the procedure. Pulmonary resection in cases of partial or complete obstruction of an airway is a procedure in which prophylaxis is clearly warranted. Likewise, prophylaxis is strongly recommended for procedures entailing entry into the esophagus. Although the range of microorganisms encountered in thoracic procedures is extensive, most are sensitive to cefazolin, which is the recommended agent. Prophylaxis against S. aureus and S. epidermidis is indicated for patients undergoing cardiac procedures. Although the risk of infection is low, the morbidity of mediastinitis or a sternal wound infection is great. Numerous studies have evaluated antibiotic regimens based on penicillin, first-generation cephalosporins, second-generation cephalosporins or vancomycin.23,24 Although prophylaxis is efficacious, clear superiority of a particular regimen has not been demonstrated. In certain cases, results were institution-dependent, with exceptionally high rates of methicillin-resistant S. aureus or S. epidermidis. Such exceptions notwithstanding, cefazolin is an appropriate agent. Of particular relevance, cardiopulmonary bypass reduces the elimination of drugs, so additional intraoperative doses typically are not necessary. The optimal duration of prophylaxis remains a debated topic, with many clinicians advocating prophylaxis for more than 24 hours, or until invasive lines and chest tubes are removed. Most surgeons continue therapy for a minimum of 24 hours. Coverage until all lines and tubes are removed is not recommended or supported by data.4 Gastrointestinal Tract Procedures Prophylaxis is recommended for most gastrointestinal procedures. The number of organisms and proportion of anaerobic organisms progressively increase along the gastrointestinal tract, so the recommendation depends on the segment of gastrointestinal tract entered during the procedure. The intrinsic risk of infection associated with procedures entering the stomach, duodenum and proximal small bowel is quite low and does not support a routine recommendation for prophylaxis. However, the predominance of clinical practice involves special circumstances that alter this recommendation. Any context associated with decreased gastric acidity is associated with a marked increase in the number of bacteria and the risk of wound infection.4 Therefore, previous use of antacids, histamine blockers or a proton pump inhibitor qualifies the patient for prophylaxis. Prophylaxis is also indicated for procedures treating upper gastrointestinal bleeding. Stasis also leads to an increase in bacterial counts, so prophylaxis is warranted in procedures to correct obstruction. In addition, the intrinsic risk of infection in patients with morbid obesity and advanced malignancy is sufficiently high to warrant prophylaxis in these cases. Although the local flora is altered in these patients, cefazolin provides adequate prophylaxis and is the recommended agent. Colorectal procedures have a very high intrinsic risk of infection and warrant a strong recommendation for prophylaxis. Several studies have demonstrated efficacy, with rates of infection decreasing from over 50 percent to less than 9 percent.3,25–27 Antibiotic spectrum is directed at gram-negative aerobes and anaerobic bacteria. Different strategies using parenterally or enterally administered antibiotics are used, but all strategies are based on the use of mechanical bowel preparation with purgatives such as polyethylene glycol, mannitol or magnesium citrate, given orally, and enemas. Such pretreatment decreases fecal bulk but does not decrease the concentration of bacteria in the stool. In fact, the risk of infection with mechanical preparation alone is still over 25 to 30 percent.26,27 Therefore, additional prophylaxis is recommended. Options include either intraluminal (oral) prophylaxis directed at aerobic and anaerobic bacteria (given the day before operation) or the parenteral administration of similarly active antibiotics immediately before the operation.28 In general, the addition of intraluminal antibiotics reduces the risk of infection to approximately 9 percent or less, similar to the risk associated with parenteral administration alone. Trials comparing intraluminal preparation alone with intraluminal preparation plus parenteral administration have produced mixed results. The common practice among colorectal surgeons in the United States uses both intraluminal and parenteral prophylaxis, with the parenteral medication administered immediately before the operation.29 Various intraluminal regimens appear to have similar efficacies. One recommended regimen consists of erythromycin base and neomycin given at 1 p.m., 2 p.m., and 11 p.m. (1 g of each drug per dose) the day before a procedure scheduled for 8 a.m. Times of administration are shifted according to the anticipated time of starting the procedure, with the first dose given 19 hours before surgery. Metronidazole can be substituted for erythromycin, and kanamycin (Kantrex) can be substituted for neomycin. If parenteral prophylaxis is desired, a second-generation cephalosporin with activity against anaerobic organisms is recommended. Cefotetan and cefoxitin are equally efficacious. To summarize, recommendations for prophylaxis of colorectal procedures include the following: (1) mechanical cleansing beginning the day before surgery, typically continued until effluent is clear (or until four to six hours before the start of the operation); (2) neomycin and erythromycin base, 1 g of each medication orally at 1 p.m., 2 p.m. and 11 p.m. the day before surgery (or starting 19 hours before the anticipated starting time of the procedure), and (3) intravenous administration of cefotetan or cefoxitin within 30 minutes of the time of incision. Prophylaxis is also recommended for appendectomy. Although the intrinsic risk of infection is low for uncomplicated appendicitis, the preoperative status of the patient's appendix is typically not known. Cefotetan or cefoxitin are acceptable agents. Metronidazole combined with an aminoglycoside or a quinolone is also an acceptable regimen. For uncomplicated appendicitis, coverage need not be extended to the postoperative period. Complicated appendicitis (e.g., with accompanying perforation or gangrene) is an indication for antibiotic therapy, thereby rendering any consideration of prophylaxis irrelevant. The recommendations for antibiotic prophylaxis for procedures of the biliary tract depends on the presence of specific risk factors. In general, prophylaxis for elective cholecystectomy (either open or laparoscopic) may be regarded as optional. Risk factors associated with an increased incidence of bacteria in bile and thus of increased risk for postoperative infection include age over 60 years, disease of the common duct, diagnosis of cholecystitis, presence of jaundice and previous history of biliary tract surgery.4 Only one factor is necessary to establish the patient as high risk. In most cases of symptomatic cholelithiasis meeting high-risk criteria, cefazolin is an acceptable agent. Agents with theoretically superior antimicrobial activity have not been shown to produce a lower postoperative infection rate. Obstetric and Gynecologic Procedures Prophylaxis is indicated for cesarean section and abdominal and vaginal hysterectomy. Numerous clinical trials have demonstrated a reduction in risk of wound infection or endometritis by as much as 70 percent in patients undergoing cesarean section.30 For cesarean section, the antibiotic is administered immediately after the cord is clamped to avoid exposing the newborn to antibiotics. Despite the theoretic need to cover gram-negative and anaerobic organisms, studies have not demonstrated a superior result with broad-spectrum antibiotics compared with cefazolin. Therefore, cefazolin is the recommended agent. The range of potential urologic procedures and intrinsic risk of infection varies widely. In general, it is recommended to achieve preoperative sterilization of the urine if clinically feasible. For procedures entailing the creation of urinary conduits, recommendations are similar to those for procedures pertaining to the specific segment of the intestinal tract being used for the conduit. Procedures not requiring entry into the intestinal tract and performed in the context of sterile urine are regarded as clean procedures. It should be recognized, however, that prophylaxis for specific urologic procedures has not been fully evaluated. Antibiotic prophylaxis is clearly recommended for certain orthopedic procedures. These include the insertion of a prosthetic joint, ankle fusion, revision of a prosthetic joint, reduction of hip fractures, reduction of high-energy closed fractures and reduction of open fractures. Such procedures are associated with a risk of infection of 5 to 15 percent, reduced to less than 3 percent by the use of prophylactic antibiotics.3 S. aureus and S. epidermidis predominate in wound or joint infections. Cefazolin provides adequate coverage. The additional use of aminoglycosides and extension of coverage beyond the operative period is common but lacks supportive evidence. Noncardiac Vascular Procedures Available data support the recommendation for coverage of procedures using synthetic material, those requiring groin incisions and those affecting the aorta.3,4,31,32 Cefazolin is the recommended agent, since most infections are caused by S. aureus or S. epidermidis. Prophylaxis is not recommended for patients undergoing carotid endarterectomy. Although two studies have demonstrated the efficacy of two postoperative doses of antibiotic,31,32 coverage for only the duration of the procedure is acceptable. Breast and Hernia Procedures Various studies have clearly demonstrated a reduction in the risk of infection by administering prophylactic antibiotics to patients undergoing breast and hernia procedures, albeit reduction of an intrinsically low risk.3,4,12,33 In general, prophylaxis is considered optional. For hernia repairs entailing the insertion of mesh, prophylaxis is considered desirable since the morbidity of infected mesh in the groin is substantial. However, no prospective trials demonstrate the effectiveness or necessity of this practice. Modified radical mastectomy and axillary node dissection also warrant prophylaxis, since wounds near or in the axilla have an intrinsic risk of infection. If prophylaxis is desired or indicated for any of these procedures, cefazolin is the recommended agent. Laparoscopic and Thoracoscopic Procedures Specific data supporting recommendation of antibiotic prophylaxis for laparoscopic or thoracoscopic procedures are lacking. Therefore, pending the availability of new data, recommendations for the same procedure performed using the “open technique” should be followed. A list of procedure-specific recommendations is given in Table 4.

Some perianal abscesses may not heal completely, with or without surgery. Antibiotics are often not enough to cure an abscess. If an abscess is larger than a grape, it will not heal with antibiotics alone & requires drainage of the pus to allow the infection to drain. ... Postoperative prophylactic antibiotic therapy for 7-10 days (eg ... 30/08/2018 · Antibiotic prophylaxis is the use of antibiotics before surgery or a dental procedure to prevent a bacterial infection. This practice isn’t as ... 01/04/2005 · Often several antibiotics are equal in terms of antibacterial spectrum, efficacy, toxicity, and ease of administration. If so, the least expensive drug should be chosen, as antibiotics for surgical prophylaxis comprise a large portion of hospital pharmacy budgets. Commonly used surgical prophylactic antibiotics include: Role of prophylactic antibiotics in laparoscopic cholecystectomy: a meta-analysis. J Gastrointest Surg 2008;12:1847-53; discussion 53. Chang WT, Lee KT, Chuang SC, et al. The impact of prophylactic antibiotics on postoperative infection complication in elective laparoscopic cholecystectomy: a prospective randomized study. Am J Surg 2006;191:721-5. SOURCES: ACOG: "Use of Prophylactic Antibiotics in Labor and Delivery." ASHP Therapeutic Guidelines: "Clinical Practice Guidelines for Antimicrobial Prophylaxis in ... Current guidelines recommend that prophylactic antibiotics end within 24 hours of surgery completion. 8 There is no documented benefit of antibiotics after wound closure in ... For humans. Antibiotic prophylaxis is most commonly used prior to dental surgery or medical surgery, however, may be used in other cases, such as prior to sexual intercourse for patients who suffer from recurrent urinary tract infections.. Even when sterile techniques are adhered to, surgical procedures can introduce bacteria and other microbes in the blood (causing ... Open Abdomen in Trauma and Emergency General Surgery, Management of: Part 1 2010; Open Abdomen Management, A Review: Part 2 2011; Open Abdomen Management, Review of abdominal wall reconstruction: Part 3 2013; Open Fractures, Prophylactic Antibiotic Use in — Update 2011; Pancreatic Injuries 2017; Pediatric Blunt Renal Trauma 2019

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