

Antibiotic Prophylaxis

Appropriate antibiotic prophylaxis in surgery depends on the most likely pathogens encountered during the surgical procedure. The type of operative procedure (Table 12-10) is helpful in deciding the appropriate antibiotic spectrum and is considered before ordering or administering any preoperative medication. Prophylactic antibiotics are not generally required for clean (class I) cases, except in the setting of indwelling prosthesis placement or when bone is incised. Patients who undergo class II procedures benefit from a single dose of an appropriate antibiotic administered before the skin incision. For abdominal (hepatobiliary, pancreatic, gastroduodenal) cases, cefazolin is generally used. Contaminated (class III) cases require mechanical preparation or parenteral antibiotics with both aerobic and anaerobic activity. Such an approach is taken in the setting of emergency abdominal surgery, as for suspected appendicitis, and in trauma cases. Dirty or infected cases often require the same antibiotic spectrum, which can be continued into the postoperative period in the setting of ongoing infection or delayed treatment.

The appropriate antibiotic is chosen before surgery and administered before the skin incision is made (Table 12-11).²⁴ Repeat dosing occurs at an appropriate interval, usually 3 hours for abdominal cases or twice the half-life of the antibiotic, although the patient's renal function may alter the timing (Table 12-12).²⁵ Perioperative antibiotic prophylaxis generally is not continued beyond the day of surgery. With the advent of minimal-access surgery, the use of antibiotics seems less justified because the risk for wound infection is extremely low. For example, routine antibiotic prophylaxis in patients undergoing laparoscopic cholecystectomy for symptomatic cholelithiasis is of questionable value. It may have a role, however, in cases that result in prosthetic graft (i.e., mesh) placement, such as laparoscopic hernia repair.

The Surgical Care Improvement Project (SCIP) is a national quality partnership of organizations committed to improving the safety of surgical care through a reduction in postoperative complications. The ultimate goal of the partnership is to save lives by reducing the incidence of surgical complications by 25% by the year 2010. The guidelines developed as part of SCIP will be monitored in every hospital (Table 12-13).²⁶

Townsend, C.M., Beauchamp, D.R., et al. (eds.). *Sabiston: Textbook of Surgery, The Biological Basis of Modern Surgical Practice*. (18th ed.). pp. 265 – 266. Philadelphia, PA: Elsevier Saunders. 2008.
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