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PREVENTION OF INFECTION IN SURGERY

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Abstract:Surgery creates most hospital infections, injuries, accidents, invalidity and death in the global healthcare system. The number of surgically treated patients per year is high and increasing. Surgical site infection (SSI) is dependent on type of operation and may occur in 5–20% after surgery, triggers 7–11 extra postoperative days in hospitals and results in 2–11 times higher risk of death than comparable, noninfected patients. Up to 60% of SSI can be prevented. Prevention of postoperative wound infection is done by good general hygiene, operative sterility and effective barriers against transmission of infections, before, during and after surgery.

Keywords: Surgical site infections, SSI, Postoperative wound infections, Prevalence, Death rate, Costs, Instruments, Technique.

Infection is a complication of surgery and a fear of patients and surgeons. Although no one goes into surgery without expecting an infection, every effort is made to prevent the risk of surgery to every patient. Postoperative infection depends on a number of factors, some of which are easier to control than others. So what can you do (or help others do) to ensure that these complications have the lowest possible chance of occurring? Not all surgeries require antibiotics. Ask your doctor if it is necessary for your surgery. For orthopedic surgery, antibiotics should be used if metal implants (such as hip and knee replacements) are used. If antibiotics are needed, they should be given within 1 hour of the start of surgery. Antibiotics may be continued after surgery, but in most cases, the dose of antibiotics used before surgery is the most important. Preventive antibiotics are established measures. A case can be made for increasing the dose in patients with a large body mass, and antibiotics probably should be re-administered during procedures lasting longer than 3 h. Chlorhexidine showers for the patient

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are not proven; however, they are inexpensive and of potential benefit. Hair removal is always done with clippers and in the operating room at the time of the procedure. No scientific case can be made specifically for using antiseptic at the surgical site before the incision. Keeping the blood glucose concentration and the core body temperature near normal probably are important, but how close to normal is unclear. Transfusion enhances SSI, but leukocyte reduction of transfused blood may be of benefit. Some evidence supports the value of antibacterial suture in preventing SSI. Intensive-postoperative and anaesthesia departments have corresponding responsibilities, especially in pre- and postoperative phase. Deviations are reported to the head of the department where the patient is located.The personnel follow procedures with respect to prevention of SSI and report deviations, problems, risk of poor hygiene and infection, to the department's management.The surgeons inform and follow up their patients in pre- and postoperative phases. Deviations concerning hygiene, risk of infection and other risks are reported to the head of the department where the patient is located.

Information to the Patient: Before and After Surgery

• Inform about contact with healthcare abroad. Inform recent illness, stomach ache with vomiting, urinary tract infections, other infections or having received antibiotics.

• Good body wash, including the hair, and change to clean clothes—from the inside to the outside –before hospitalization.

• If diabetes, ask for a good control before, during and after surgery, to heal the wound quickly and not to be infected (1B).

• Quit smoking at least 1 month before elective surgery—especially orthopaedic surgery. Smoking increases the risk of infection and reduces bone healing (1B).

• Do not shave the area to be operated on before surgery (1A).

• No unnecessary hospital stays before surgery to avoid contact with more resistant hospital bacteria. Preferably admission the day before—or the same day as the operation. To remove the patient from a planned operating programme should be an exception!

• Notify the manager if poor hygiene and cleaning in the patient room.

• Perform good hand hygiene throughout your stay. If bedridden, ask for wipes for hand disinfection. Ask visitors to carry out hand hygiene on arrival and when they leave the hospital.

Microbial contamination of the surgical site leads to SSI that can be classified as either incisional or organ/space . Incisional SSI are divided into superficial, involving only the skin and subcutaneous tissues; and deep, involving deeper soft tissues . Organ/space SSIs can involve any part of the anatomy excluding the incised body wall layers (i.e., intra-abdominal abscess) . Quantitatively, >105 microorganisms/g of tissue is defined as surgical site contamination, significantly increasing the risk of SSI . On the other hand, a much smaller inoculum of contaminating microorganisms is required to produce infection when foreign material is present at the site. For example, only 100 staphylococci/g of tissue are needed to increase the risk of SSI when introduced on a silk suture . For most SSI, the pathogens originate from the endogenous flora (e.g., patient's skin, hollow viscera). However, surgical

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personnel, the operating room environment, surgical instruments, and many other exogenous sources contribute to these serious infections.Many proven and potentially valid methods are employed to prevent SSI. Coordinated and standardized protocols with good data collection can assist the multi-disciplinary efforts to reduce SSI within the unique practices of a given institution.

Infectious diseases are a serious complication of surgery, and many patients fear it. The good news is that many infections are preventable. Make sure you understand the steps you can take to prevent infection, and let your surgeon know right away if you experience any signs of infection. Prevention is good, early treatment is crucial. By taking a few steps, you can reduce the chance of getting an infection after surgery.

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