SURGICAL SITE INFECTIONS (SSIs)

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PREAMBLE

- What are SSIs?
- SSI;
  - Categories
  - Degrees
- Guidelines for the prevention of SSI
WHAT ARE SURGICAL SITE INFECTIONS?
Infections that follow surgery or admission to the hospital
Health Care Associated Infections

- Respiratory Infections
- Urinary Tract Infections
- Bacteremia
- Surgical site Infections
Health Care Associated Infections

- Respiratory Infections
- Urinary Tract Infections
- Bacteremia
- Surgical site Infections
WOUND INFECTION

Invasion of tissues by organisms following breakdown of local and systemic host defences, leading to cellulitis, lymphangitis, abscess and bacteraemia
SURGICAL SITE INFECTION (SSI)
Infection of surgical wounds
Surgical Site Infection (SSI) – Sources of Organisms

- Patient
- Staff
- Environment
Uncomplicated Surgical Wound
Uncomplicated Surgical Wound
Infection
RISK FACTORS FOR SURGICAL SITE INFECTIONS
PATIENTS WITH RISK FACTORS

THE CRITICAL NUMBER OF BACTERIA NEEDED TO START INFECTION IS REDUCED

HIGHER CHANCES OF DEVELOPING SSI
RISK FACTORS FOR SURGICAL SITE INFECTIONS

MICROORGANISM-RELATED

PATIENT-RELATED

SURGICAL TECHNIQUE-RELATED
• Increased pathogenicity
• Bigger size of inoculum
• Metabolic causes
  • Malnutrition
  • Jaundice
  • Uremia
  • Diabetes
• Immunosuppression
  • Cancer
  • AIDS
• Iatrogenic
  • Steroids
  • Chemotherapy
  • Radiotherapy
• Poor surgical technique
  • Dead space
  • Hematoma
  • Devitalized tissue
• Foreign material (sutures / drains)
• Poor perfusion
  • Systemic shock
  • Local ischemia
CATEGORIES OF SSIs
CATEGORIES OF SSI

- Superficial SSI
- Deep SSI
- Organ Space SSI
CATEGORIES OF SSI

- Superficial Surgical Site Infection
- Deep Surgical Site Infection
- Organ Space Surgical Site Infection
DEGREES OF SSIs
DEGREES OF SSI

SSI

Major

Minor
MAJOR SSI

• Discharges significant quantities of pus spontaneously, or
• needs a secondary procedure to drain pus
• has associated systemic signs e.g. tachycardia, pyrexia, leukocytosis
MAJOR SSI

• may or may not discharge discharge pus
• Has other signs of infection
• **no systemic signs** e.g. tachycardia, pyrexia, leukocytosis
WHO
GLOBAL GUIDELINES ON THE PREVENTION OF SSIs
WHO GLOBAL GUIDELINES ON THE PREVENTION OF SURGICAL SITE INFECTIONS

• Give antibiotic prophylaxis before incision, when indicated

• In contaminated / clean-contaminated procedures, do not administer additional antibiotics after surgical incision is closed

• Do not apply antimicrobial agents (ointments, solutions, or powders) to surgical incision with aim of preventing SSI
The ‘Decisive Period’

- Time taken by acute inflammatory, humoral and cellular defenses to be mobilized
- Up to 4 hours
- Invading bacteria may settle in the tissues
WHO GLOBAL GUIDELINES ON THE PREVENTION OF SURGICAL SITE INFECTIONS

• Ensure blood glucose levels <200 mg/dL in patients

• Maintain perioperative normothermia

• Patients should shower the night before the day of the procedure
WHO GLOBAL GUIDELINES ON THE PREVENTION OF SURGICAL SITE INFECTIONS

• Perform **skin preparation**

• Consider intraoperative **irrigation** of deep subcutaneous tissues with aqueous iodophor solution

• **Hair** should either not be removed or, if absolutely necessary, should be removed only with a clipper. Shaving is strongly discouraged at all times
WHO GLOBAL GUIDELINES ON THE PREVENTION OF SURGICAL SITE INFECTIONS

• Surgical hand preparation should be performed before donning sterile gloves.

• Consider the administration of oral or enteral multiple nutrient-enhanced nutritional formulas for the purpose of preventing SSI in underweight patients who undergo major surgical operations.