ANTISEPSIS

A.-is complex treatment measures aimed at killing pathogenic (disease-causing) microorganisms in the wound or the whole human body

Antisepsis is a treatment method of a surgical infection, while asepsis is above all method of infection prophylaxis

The most clinically important type of microorganisms causing surgical infections –

BACTERIA

BASIC DEFINITIONS

- A **LOCAL INFECTION** is limited to the specific part of the body where the microorganisms remain.

- If the microorganisms spread and damage different parts of the body, it is a **SYSTEMIC INFECTION**.

BASIC DEFINITIONS

- When a culture of the person's blood reveals microorganisms, the condition is called **BACTEREMIA.**

- When bacteremia results in systemic infection, it is referred to as **SEPTICEMIA.**

BASIC DEFINITIONS

- **ACUTE INFECTION** generally appear suddenly or lasts a short time.

- **A CHRONIC INFECTION** may occurs slowly, over a very long period, and may lasts months or years.

BASIC DEFINITIONS

NOSOCOMIAL INFECTION classified as infection that is associated with the delivery of health care services in a health care facility.

The incidence of nosocomial infections is significant. Major sites for these infections are:

- RESPIRATORY AND URINARY TRACTS,
- BLOODSTREAM
- WOUNDS.

BASIC DEFINITIONS

Factors that contribute to nosocomial infection risks are:

- invasive procedures,
- inappropriate use of antibiotics,
- insufficient hand washing after patient contact and after contact with body substances.

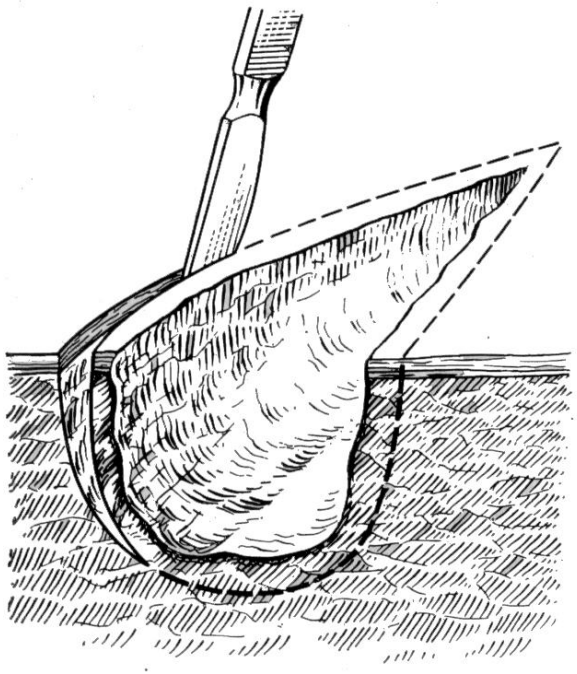
TYPES OF ANTISEPSIS:

1. MECHANICAL

Elimination of necroses, evacuates hematomas, extracts foreign bodies, thus liquidating favorable conditions for bacterial growth with handle manipulations

THIS IS PRIMARY SURGICAL WOUND TREATMENT

MECHANICAL ANTISEPSIS



- Sterile technique
- Anesthesia
- Wound examination and debridement
- Removing of necrotic tissues
- Hemostasis
- Repairing of anatomical structures
- Draining and “dead space” obliteration
- Wound closure

2. PHYSICAL ANTISEPSIS

Creating of unfavorable conditions in the wound for bacterial growth, reduction of toxins and tissue degradation products absorption by physical methods.

PHYSICAL ANTISEPSIS

Physical factors are an important part of modern methods of treatment of wounds & inflammatory processes. The agents of this type of antisepsis are:

- light,
- heat,
- sound waves,
- phenomenon of hygroscopicity.

PHYSICAL ANTISEPSIS

Physical antisepsis includes the following methods:

- application of hygroscopic dressing material;
- hypertonic solutions (5-10% solutions of NaCl);
- draining;
- usage of sorbents;
- usage of laser, UV & X-rays, US etc.

TYPES OF PHYSICAL ANTISEPSIS

By hygroscopic drapes and drainage tubes they accelerate the evacuation of the wound containment and bacteria

Open treatment of wounds – face burns – open air makes the wound dry and stops bacterial growth.

The same effect have

Ultraviolet exposition

and Physiotherapeutic procedures

TYPES OF ANTISEPSIS:

3. Chemical antisepsis

It may have local and general mode of action when antibacterial drugs (antiseptics) applied through a wound or in a bloodstream

ANTISEPTICS - REQUIREMENTS

1. Bactericidal or bacteriostatic effect.
2. Nontoxic for cells tissues, organs.
3. To act in contact with live tissues.
4. To be stable – not to evaporate
5. To be affordable – not very expensive
7. Not to oppose local defense and regeneration mechanisms
8. To be easy for storage.

ANTISEPTICS

Halogens:

- **Iodine** (waterbased or spiritbased solutions) – is used for treatment of wounds
- **Hibitane** – 20% water solution of chlorine-hexidine gluconate. Strong bactericidal effect. For lavage of abscess cavities, infected wounds. For disinfection of skin.

ANTISEPTICS

Oxydizers – in contact with tissues liberates O2 :

- **Hydrogen Peroxide**– 3% aqueous solution of Hydrogen Peroxide. It has weak bactericidal effect. Used for mechanical wound cleansing like foam, in anaerobic infections.
- **KMnO4** – violet crystals, easily dispersible. 1% solution with good bactericidal action. For lavage in proctology and gynecology especially for anaerobic infections.

ANTISEPTICS

Alcohols (ethyl spirit, isopropyl spirit)

- Used as a solvent for other disinfectants and antiseptics;
- Most commonly used skin antiseptic;
- Irritating to tissues and painful on open wounds;
- Repeated use dries skin;
- Forms coagulum in presence of tissue fluid

TYPES OF ANTISEPSIS:

4. Biologic – when specific treatment with drugs of biological nature is maintained:

- Antibiotics;
- Bacteriofages;
- Anatoxines;
- Immune-globulin application – when transfusion of plasma and blood is performed;
- Proteolytic ferments (hemotripsine) for lesion of devitalized tissues.

TYPES OF ANTISEPSIS:

5. Mixed– in combination of action of several curative factors on bacterial cell and macro-organisms

Primary surgical management is a combination of a mechanical manipulations, physical factors and chemical antiseptics