**Table 1: ﻿**Infections by Wound Type

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Diabetic foot ulcer** | **Arterial Leg Ulcers** | **Venous Ulcers** | **Pressure Ulcers** |
| **Diagnostic clinical indicators of infection** | * Cellulitis * Lymphangitis * Phlegmon * Purulent * Exudate * Pus/abscess | * Cellulitis * Pus/abscess | * Cellulitis | * Cellulitis |
| **Subtle clinical indicators of infection** | * Crepitus in the joint * Erythema * Fluctuation * Increase in exudate level * Induration * Localized pain in a normally asensate foot * Malodour * Probes to the bone * Unexpected pain/tenderness | * Change in colour/viscosity of exudate * Change in wound bed colour * Crepitus * Deterioration of wound * Dry necrosis turning wet * Increase in local skin temperature * Lymphangitis * Malodour * Necrosis – new or spreading | * Delayed healing despite appropriate compression therapy * Increase in local skin temperature * Increase in ulcer pain/change in nature of pain * Newly formed ulcers within inflamed margins of pre-existing ulcers * Wound bed extension with inflamed margins | * Change in nature of pain * Crepitus * Increase in exudate volume * Pus * Serous exudate with inflammation * Spreading erythema viable tissues become sloughy * Warmth in surrounding tissues * Wound stops healing despite relevant measures |
| **Signposts of pending infection (critical colonization)** | * Blue-black discolouration and haemorrhage (halo) * Bone or tendon becomes exposed at base of ulcer * Delayed wound healing despite offloading and debridement * Deterioration of the wound * Friable granulation tissue that bleeds easily * Local oedema * Sinuses develop in ulcer * Spreading necrosis/gangrene * Ulcer base changes from healthy pink to yellow or grey | * Erythema * Erythema in peri-ulcer tissue persists with leg elevation * Fluctuation * Increase in exudate volume * Increase in size in a previously healing ulcer * Increased pain * Ulcer breakdown | * Discolouration (dull, dark red) * Friable granulation tissue that bleeds easily * Increase in exudate viscosity * Increase in exudate volume * Malodour * New onset dusky would hue * Sudden appearance/ increase in amount of slough * Sudden appearance of necrotic black spots * Ulcer engagement | * Enlarging wound despite pressure relief * Erythema * Friable granulation tissue that bleeds easily * Malodour * Oedema |

|  |  |
| --- | --- |
| **Type of Pathogen** | **Causative Organism** |
| Gram Negative Aerobic Rods | * *Pseudomonas aeruginosa* |
| Gram Negative Facultative Rods | * *Escherichia coli* * *Enterobacter* species * *Klebsiella* species * *Proteus* species |
| Gram Positive Cocci | * Beta hemolytic *Streptococci* * *Enterococci* * *Staphylococcus aureus/MRSA* |
| Anaerobes | * Bacteroides * *Clostridium* |
| Fungi | * Yeasts * *Aspergillus* |

**Table 2: ﻿**Most Common Causative Organisms Associated with Wound Infections

|  |  |  |
| --- | --- | --- |
| **Level of microbial burden** | **Primary treatment** | **Adjunct treatment** |
| Nonhealing wound | Antiseptics | - |
| Critical colonization | Topical antiseptics | - |
| Local infection | Systemic antibiotics | Topical antiseptics |
| Spreading infection | Systemic antibiotics | Topical antiseptics |

**Table 3: ﻿**A Guide to Antimicrobial Management of Wound Bioburden

|  |  |  |  |
| --- | --- | --- | --- |
| **Type** | **Advantage** | **Disadvantage** | **Usefulness** |
| ***Modern Preparations*** | | | |
| Silver-ionic silver | 20-50µg/mL concentration required for microorganism kill effect. Delivery and dressing dependent | Can develop sensitivity | Anti-inflammatory. Useful in chronically inflamed wounds |
| Cadexomer iodine | Bactericidal effect at 0.1% As for povidone iodine (PVI) | As for PVI | Pro-inflammatory. Useful in recalcitrant wounds |
| Medical grade honey or Manuka honey | Broad spectrum bactericidal effect due to the slow release of hydrogen peroxide. Anti-inflammatory. Stimulatory effect on granulation tissue | May cause stinging. May require daily dressings dependent on dressing vehicle | High glucose level in stimulatory to macrophages and lymphocytes. Deodorizing effect |
| Tea tree oil | New preparations looking at prolonged activity | Toxic to human tissue at high concentrations | Anti-inflammatory properties can assist in healing chronic wounds |
| ***Traditional Preparations*** | | | |
| Cetrimide | Effective against most Gram positive and negative microorganisms. Good detergent action | Can cause hypersensitivity. Even very low concentrations can inhibit fibroblast growth. High toxicity to human tissue. | Emulsifying and detergent properties assist when cleaning wounds. Consider where wound healing is not the focus |
| Chlorhexidine | Active against Gram positive and negative microorganisms | Skin sensitivity reported. Presence of blood and organic material can decrease its activity | Small effect on human tissue |
| Povidone iodine (PVI) | Bactericidal effect at 1%. Very broad activity. Active against bacteria, spores, fungi, and viruses. Effective against biofilms | Local irritation and sensitivity may occur. Cannot apply to individuals with thyroid dysfunction, pregnant/lactating women | Useful as a 3–5 minute wound soak at 1% concentration for direct surface contact kill |

**Table 4: ﻿**Commonly Used Topical Antiseptics