ANTIMICROBIAL TREATMENT OF SURGICAL INFECTION Principles

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Antimicrobials may be used to prevent or treat established surgical infection. The use of antibiotics for the treatment of established surgi - cal infection ideally requires recognition and determination of the sensitivities of the causative organisms. Antibiotic therapy Figure 5.18

Infected animal bite/wound of the upper thigh, treated by open therapy following virulent staphylococcal infection.

empirical and later modified depending on microbiological findings on culture and sensitivity . Once antibiotics have been administered, it may not be possible to grow bacteria from the wound and so the opportunity to ascertain the most appropri ate antibiotic sensitivities is lost if a patient's condition does not improve on empirical antibiotic therapy . Antibiotics alone are rarely su ffi cient to treat SSIs, which may also need open drainage and debridement (Summary box 5.14). Summary box 5.14 Principles for the use of antibiotic therapy /uni25CF /uni25CF /uni25CF There are two approaches to antibiotic treatment: A narrow-spectrum antibiotic may be used to treat a known sensitive infection; for example, MRSA (which may be isolated from pus) is usually sensitive to vancomycin or teico planin, but not flucloxacillin. Combinations of broad-spectrum antibiotics can be used when the organism is not known or when it is suspected that several bacteria, acting in synergy , may be responsible for the infection. For example, during and follow ing emergency surgery requiring the opening of perforated or ischaemic bowel, any of the gut organisms may be responsi b le for subsequent peritoneal or bacteraemic infection. In this case, a broad-spectrum antibiotic such as teicoplanin or mero penem, which are e ff ective against a wide range of aerobic bacteria, is combined with metronidazole, which is e ff ectiv against anaerobic bacteria. Alternatively , triple therap y is used with amoxicillin, gentamicin and metronidazole. The use of such broad-spectrum antibiotic strategies should be guided by specialist microbiological advice. If clinical response is poor after 3–4 days, there should be a re-evaluation with a review of available culture and sensitivity results and further investi gations requested to exclude the development or persistence of infection such as a collection of pus. In surgical units in which resistant Pseudomonas or other Gram-negative species (such as Klebsiella) have become 'resident opportunists', it may be necessary to rotate anti pseudomonal and anti-Gram-negative antibiotic therapy (Summary box 5.15). Summary box 5.15 Treatment of commensals that have become opportun ist pathogens /uni25CF /uni25CF

Antibiotics do not replace surgical drainage of infection Only spreading infections or signs of systemic infection justify the use of antibiotics Whenever possible, the organism and sensitivity should be determined They are likely to have multiple antibiotic resistance It may be necessary to rotate antibiotics

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Revision #1
Created 2025-12-31 15:18:37 UTC by Omar Ayman
Updated 2025-12-31 15:18:37 UTC by Omar Ayman