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Microbiological analysis of skin and soft tissue infections in cancer patients at Apeksha Hospital, Sri Lanka

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Background: Skin and soft tissue infections (SSTIs) in patients with malignancies are common and frequently have serious consequences. These infections are caused by a wide range of microorganisms with variable anti-microbial susceptibilities.

Objectives: To analyse skin and soft tissue infections in cancer patients at Apeksha Hospital with regard to causative agents, antibiotic susceptibility and associated factors.

Methods: A descriptive cross sectional study was carried out for 18-month period. Specimens from adult cancer patients admitted to Apeksha Hospital, Maharagama with SSTIs were analysed. Aerobic and anaerobic bacterial culture, fungal culture, species identification and antibiotic susceptibility testing were performed. Clinical data were obtained from patient records.

Results: A total of 85 patients were included with a male: female ratio of 1:1.1. Majority (75%) were >50 years old. Out of the 80 aerobic bacterial isolates most (69%) were Gram negatives, majority being *Enterobacteriaceae* (42/80) followed by *Pseudomonas* (11/80). *Escherichia coli* was the commonest bacterial species. *Staphylococcus aureus* was the commonest

Gram positive organism (22/80). No strict anaerobic bacteria were yielded however, 3 fungi (two *Candida albicans*, one *Fusarium* species) were isolated. Enterobacteria showed lowest resistance to amikacin (7%) and meropenem (10%). *Pseudomonas* species had highest resistance to ticarcillin-clavulanate (64%). Methicillin resistant *Staphylococcus aureus* (MRSA) rate was 61%. None had resistance to anti-MRSA agents. Gram-negative bacteria caused 74% of wound infections while 54% of the abscesses were caused by Gram positives. Gram negatives were prevalent (73%) in patients with solid organ cancers and Gram positives in haematological malignancies (83%). Gram-negative infections (69%) predominate in patients on radiotherapy while chemotherapy had similar rates of infections by the two types of organisms.

Conclusion: SSTIs in the cancer patients at Apeksha Hospital, Maharagama are mainly caused by Gram negative bacteria however, Gram positives predominate in haematological malignancies. Multi-drug resistance is prevalent in all commonly isolated pathogens.

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