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Spectrum of sputum culture isolates and their antibiotic susceptibility pattern in adult cancer patients receiving empirical antibiotics at Apeksha Hospital, Maharagama, Sri Lanka

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Background: Infections are the second commonest cause of non-cancer deaths among patients with malignancies. Both lower respiratory tract infections (LRTI) and blood stream infections have shown near equal prevalence in these populations.

Objective: To determine the spectrum and the antibiotic susceptibility pattern of the bacteria isolated from sputum of cancer patients receiving empirical antibiotics for LRTI at the time of the specimen collection.

Methods: Fifty five patients who were diagnosed clinically and/or radiologically to have LRTIs were included in the study from May, 2018 to January, 2019 at Apeksha Hospital, Maharagama. Sputum culture was done and ABST was performed for isolated pathogens.

Results: *Klebsiella pneumoniae* was the commonest pathogen (49.1%, 27/55) isolated followed by multi-drug resistant *Acinetobacter* spp. (16.4%, 9/55). Overall proportion of coliforms was found to be 63.6% (35/55). All the isolated *Staphylococcus aureus* (12.7%, 7/55) were

methicillin-resistant (MRSA) and inducible clindamycin resistant was detected among three of those. Coliforms showed the highest sensitivity to amikacin (71.4%, 25/35) and gentamicin (68.6%, 24/35). Colistin was the only antibiotic detected sensitive against eight *Acinetobacter baumannii* /*A. calcoaceticus* isolates. One *A. iwoffii* isolate was resistant to all the tested antibiotics including colistin. Extended spectrum beta lactamase (ESBL) production was detected in 22.8% (8/35) and carbapenem resistance in 54.3% (19/35). Meropenem was the empirical antibiotic of choice in this patient population which had been given to 34.5% (19/55). The isolated pathogen in 54.5% (30/55) of the patients was resistant to the selected empirical antibiotic.

Conclusion: Sputum culture isolates show a very high resistance to multiple antibiotics which results in limitations of appropriate empirical antibiotic selection.

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