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Distribution and drug resistance of clinically isolated pathogenic bacteria at a tertiary care hospital in Haikou, China

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Objective: To analyze the distribution and drug resistance of clinical isolated pathogens to provide reference for rational use of antimicrobial agents.

Methods: We retrospectively analyzed the distribution and drug resistance data of clinical bacterial isolates from the Second Affiliated Hospital of Hainan Medical University from Jan 2018 to Dec 2018 and their clinical distribution and drug resistance were analyzed.

Results: The results of comprehensive analysis of 7 897 non-repetitive bacteria showed that 5 044 strains (63.87%) were Gram-negative bacteria, 1 818 strains (23.02%) were Gram-positive bacteria, and 1 035 strains (13.11%) were fungi. Gram-negative bacteria mainly were *Pseudomonas aeruginosa* (15.44%), *Escherichia coli* (12.79%) and *Acinetobacter baumannii* (8.66%). Gram-positive bacteria mainly were *Staphylococcus aureus* (6.43%), *Enterococcus faecium* (4.89%) and *Enterococcus faecalis* (4.65%). The main fungi were *Candida albicans* (6.34%). Most of the collected and tested samples were urine (32.87%), followed by sputum (30.10%) and wound secretion (13.54%). In emergency department, intensive care unit and urology department, the detection rate of pathogens was most frequently found among three departments. *Escherichia coli* had higher resistance to ampicillin, tetracyclin and piperacillin, but were sensitive to imipenem and meropenem. *Pseudomonas aeruginosa* were sensitive to amikacin, tobramycin and gentamycin. *Acinetobacter baumannii* had higher resistance to cefotaxime, cefepime, and they were sensitive to minocycline. Among *Staphylococcus aureus*, a total of 123 strains of MRSA (24.21%) were more resistant to penicillin, azithromycin and erythromycin, but sensitive to vancomycin, linezolid and taicoplanin.

Conclusions: The problem of drug resistance of clinical isolated pathogens was serious. The hospital should strengthen the dynamic monitoring of drug resistant bacteria. Antibiotics should be used rationally to reduce the spread of drug resistant strains and effective measures must be taken to prevent infections.

Keywords: Pathogen; Clinical distribution; Antibiotics; Drug resistance

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