

The Pattern of Bacterial Pathogens & their Antibiotics Sensitivity among Patients with Respiratory Tract Infections

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Abstract

- Background** Knowing the bacterial pathogens and their antibiotic sensitivity is an important way of establishing a suitable guideline of treatment of infection.
- Objectives** To isolate bacterial pathogens from patients with respiratory tract infections (RTI), and to determine the antibiotic sensitivity of isolates.
- Methods** Sputum specimens were collected from 145 patients with RTI admitted to Al-Kindy Teaching Hospital from March 2011 to January 2012. Out of these, 88 (60.7%) patients (age rang 17-59 years) had an established bacterial etiology, and of these, 57 (64.8%) were males and 31 (35.2%) females. All isolates were diagnosed according to bacteriological and biochemical standard methods. For identified of antimicrobial susceptibility used from Kirby Bauer method according to (NCCLS).
- Results** *Klebsiella* species and *Pseudomonas aeruginosa* were the most common isolates among the Gram negative pathogens (26.2% and 11.7% respectively), followed by *Escherichia coli* and *Proteus* species, while *Streptococcus pneumonia* was the most common isolate among the Gram positive organisms, identified in (15.2%) followed by *Staphylococcus aureus* and *Streptococcus pyogenes*. High rates of resistance to Amoxicillin and Cephalothin were demonstrated by all bacteria, whereas most isolates were found to be highly sensitive to Amikacin, Ciprofloxacin and Tobramycin. In contrast, Cefotaxim, Tetracyclin, Gentamycin and Erythromycin were less effect against most of isolates.
- Conclusions** *Klebsiella* spp. was the most common pathogens, whereas *Streptococcus pneumonia* which ranks as second common pathogens from patients with RTI in the present study. Amikacin, Ciprofloxacin and Tobramycin were the most effect antibiotics *in vitro* against tested bacteria. Conversely, no or less effect of other antibiotic agents was obtained making them not to be considered the drugs of choice in treatment of patients with RTI.
- Keywords** Bacterial pathogens, Antibiotics resistance, Patients RTIs.

Introduction

Respiratory tract infection (RTI) is defined as any infectious disease of the upper or lower respiratory tract. Upper respiratory tract infections (URTIs) include the common cold, laryngitis, pharyngitis/tonsillitis, acute rhinitis, acute rhinosinusitis and acute otitis media. Lower respiratory tract infections (LRTIs) include acute bronchitis, bronchiolitis, pneumonia and tracheitis ⁽¹⁾. The Centers for

Disease Control and Prevention (CDC), World Health Organization (WHO) and Institute of Medicine have identified antimicrobial resistance as a major public health threat ⁽²⁻⁴⁾. Antibiotic is credited with dramatic reduction in the morbidity and mortality associated with many bacterial infections, its abuse has resulted in the rapid emergence of resistant strains that reduce the effectiveness of many antibiotics ⁽⁵⁾.