

Antibiotics are commonly prescribed for RTIs in adults and children in primary care. General Practice Consultation Rates (GPCR) in England and Wales show that a quarter of the population will visit their GPCR because of an RTI each year <sup>(6)</sup>. Therapy for community acquired respiratory tract infections is often empirical. However, increasing antibiotic resistance in frequently isolated respiratory tract pathogens complicated the selection process of antimicrobial agents <sup>(7)</sup>. Pharmaco-economic analyses have confirmed that bacteriologically more effective antibiotics can reduce overall management costs. Particularly with respect to consequential morbidity and hospital admission. Application of these principles would positively benefit therapeutic outcomes, resistance avoidance and management costs and will more accurately guide antibiotic choices by individuals, formulary, and guideline committees <sup>(8)</sup>.

## 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.

The sputum samples were collected in sterile universal plastic containers and sent to the Diagnostic Microbiology Laboratory of Al-Kindy Teaching Hospital were analyzed. All isolates were diagnosed according to well-known established bacteriological methods <sup>(9)</sup>. Biochemical identification of bacterial species was performed by standard methods <sup>(10)</sup>.

**Antimicrobial susceptibility test:** The isolates were subjected to susceptibility testing to the commonly used antimicrobial agents by Kirby - Bauer method according to criteria of National Committee for Clinical Laboratory Standard (NCCLS) <sup>(11)</sup>, and their results of zone growth inhibition were compared to that in table 1.

**Statistics:** Descriptive statistical analysis (number and percentage) were used to calculate for type of bacterial isolates and their sensitivity results.

**Table 1. Zone size and their interpretation (National Committee for clinical laboratory Standard (NCCLS)**

Antimicrobial agent (symbol)	Disc potency	Diameter of zone of inhibition (mm)		
		Sensitive	Intermediate	Resistant
Amikacin (AN)	30 µg	≥ 17	15-16	≤14
Amoxicillin (AMX)	10 µg	≥18	14-17	≤ 13
Ciprofloxacin (CIP)	5 µg	≥21	16-20	≤ 15
Gentamycin (GM) Tobramycin	10 µg	≥15	13-14	≤ 12
(TM)	10 µg	≥15	13-14	≤12
Cephalothin (CF)	30 µg	≥ 18	15-17	≤ 14
Cefotaxim (CTX)	30 µg	≥19	15-18	≤ 14
Tetracycline (TE)	30 µg	≥ 19	15-18	≤ 14
Erythromycin (ER)	15 µg	≥ 23	14-22	≤ 13

## Results

A total of 145 patients with RTI were examined, the bacterial etiology agents were identified in 88(60.7%) patients. In our study since the number of males was higher than females (64.8%), so the number of isolates was comparatively higher in males than females.

From 88 positive cases with RTI, 103 bacterial strains were isolated. Out of these, 64 (62.1%) were Gram-negative bacilli and 39 (37.9%) were Gram-positive cocci. Indeed some sputum samples contained more than one bacterium. These results as shown in figure 1.