Colistin, Carbapenem and Cephalosporin-resistant Klebsiella pneumoniae reported from Misrata, Libya

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Abstract

Klebsiella pneumoniae is a significant human pathogen causing community and nosocomial infection. The use of carbapenem has increased since the spread of extended-spectrum β-lactamase (ESBL) resulting in the emergence of carbapenem resistant K. pneumoniae (CRKP). Due to the continued use of colistin for treatment of infections by CRKP, resistance to colistin has also been reported in several countries and become a major public health concern.

Materials and Methods

Confirmation of identification using VITEK2 Compact

Screening for resistance: Carbapenems 10µg, Cephalosporins 30µg, and Cefoxitin 30µg

Reduced susceptibility

MIC by VITEK using current CLSI and EUCAST breakpoints

Detection of Colistin resistance

Detection of AmpC

Carbapenem R

Detection of carbapenemases and resistant phenotype

Carbapenem S, Cephalosporin R

Ear swabs

Wound swabs

Diabetic foot wounds

Surgical wound swabs

Urine

Figure 1. Specimen Source of 200 Clinical Isolates.

Table 1. Susceptibility rates of 85 K. pneumoniae isolates according to current CLSI and EUCAST breakpoints

Antibiotics & Disk µg

AmpC

CXM

CIP

CXM

CIP

AmpC

CXM

CIP

AmpC

GENT

SXT

TOB

CIM

Nalidixic acid

Amoxicillin

Imipenem

Erythromycin

Tetracycline

Residues

ESBL

MENIS

Enterobacteriaceae Isolated from Different Environments.
Wayne, PA.


References