Results: In this study, 221 (93%) GNB were confirmed ESBL producers (range between centers, 74 to 99%) of which 94% were nosocomial in origin. ESBL in intensive care unit (ICU) and non-ICU patients was 86% and 98% respectively. Among ESBLs in ICU, 13.5% were community acquired. Resistance to LEV was 73.3% > P/T 27.3% and > AMK 12.3%. No resistance to IMP and MER seen. Overall 61% were MDR. Four KS (1.7%) isolates were resistant to ERT. PCR showed blaCTX-M in 73%, blaTEM in 56% and blaSHV in 38%. Multiple genes were present in 60%.

Conclusion: Prevalence of ESBL among GNB causing infections continues to be high in Indian medical centers. ERT shows good activity equivalent to the tested Group 2 carbapenems and may be considered for treatment of such infections.

doi:10.1016/j.ijid.2008.05.279

17.014

Early Detection of ESBL Producers from Clinical Samples Using Macconkey Agar with Ceftazidime

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Keywords: CMAC; ESBL Lactose-fermenters

Objectives: MacConkey agar with ceftazidime (CMAC) was used for early detection of extended spectrum beta-lactamase(ESBL) for clinical sample received from ICU.

Methods: A total of 374 clinical samples were received from ICU in the Dept. of Microbiology. Along with MacConkey agar and Blood agar, the samples were processed on MacConkey agar with ceftazidime (1 mg/L) for provisional detection of ESBL isolates. Lactose-fermenting colonies on MacConkey agar with ceftazidime (CMAC) were provisionally detected as ESBL producing isolates. These isolates were identified by standard methods. Presence of ESBL was determined by CLSI method (cefotaxime and ceftazidime disks with and without clavulanic acid).

Results: 128 isolates showed growth on CMAC of which 50 were lactose fermenters. 31 isolates were identified as E.coli and 19 as K.pneumoniae. All the 50 isolates were identified as confirmed ESBL producers.

Conclusion: Compared to phenotypic identification of ESBL producers, CMAC helps in early detection ESBLs which can be very useful from treatment point of view. Since in our hospital we have about 60% of ICU patients growing ESBL producers, this early detection helps the intensivist to start anti-ESBL therapy.

doi:10.1016/j.ijid.2008.05.280

Method: To find out the published series three national databases (Ulakbim Turkish Medical Literature database, http://www.turkishmedline.com, http://medline.pleksus.com.tr) and two international databases (Pubmed and Science Citation Index (SCI)) were searched. Keywords for national databases were """"urinary tract infection"""" or """"uriner sistem infeksiyonu"""" or """"urinary tract infection"""" or """"uriner sistem enfeksiyonu"""". Keywords for Index Medicus and SCI-expanded were """"urinary tract infection"""" and Turkey. Articles published before 1997 ii) resistance data of outpatient and inpatient strains were not analysed seperately iii) antibiotic susceptibility data were not given, were excluded. All studies used Kirby-Bauer disc diffusion test by using NCCLS/CLSI criteria for determination of antimicrobial resistance. Resistance data of inpatient and outpatient strains were compared by Chi-square test. A p value less than 0.05 was considered significant.

Results: Data for 25577 E.coli strains were obtained from 53 articles (28 articles from 1997—2001 period, 25 from 2002—2007 period). Of these starins 18106 were isolated from outpatients whereas 7471 from inpatients. The resistance rates and comparisons of 1997—2001 and 2002—2007 periods are shown in Table 1.

Conclusions: Trimethoprim sulphonametoxazole resistance is very high and it cannot be recommended in the empirical treatment any more. Nitrofurantoin may be a cheap and reasonable option in uncomplicated UTI. Aminoglycosides and third-generation cephalosporins may be good choices in the treatment of complicated UTI. Carbapenems may be conserved for extended-spectrum beta lactamase producing strains. ESBL rate in the outpatient strains is alarming. Policies to constrain resistance such as antibiotic stewardship or restriction programmes should be implemented immediately.

doi:10.1016/j.ijid.2008.05.282

17.017

OXA- and MBL-Type Enzymes Among Uncommonly Isolated Acinetobacter Spp. in Asia-Pacific Nations: Natural Reservoir for Resistance Determinants

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Background: Acinetobacters (AC) other than A. baumanii (ACOB) are occasionally recovered from clinical sources, but OXA and MBL genes have rarely been reported. The aim of this study was to identify and characterize OXA and MBL genes in AC. Gene context of blaOxa-23 detected in A. radioreistant (AR) was also evaluated.

Methods: AC recovered from patients in 10 countries in the Asia-Pacific (APAC) region were tested by broth microdilution. Isolates with imipenem or meropenem MIC ≥ 8 mg/L were screened for MBL- (IMP-like, VIM-like, SIM-1, GIM-1, SPM-1) and OXA- (OXA-23, -24, -58 clusters) genes. OXA genes and surrounding sequences were analysed using primers targeting to ISAba1, 2 or 3, or degenerate primer approach. Southern blot and hybridization of chromosomal and plasmid DNA were performed. RNA extraction followed by reverse transcriptase-PCR was performed to access expression of blaOxa-23. Species identification was confirmed by 16S rRNA.

Results: Among 543 AC isolates, 28.2% carried OXA (98.7%) or MBL (1.3%) genes, from which 2.6% were found ACOB. An A. juni (AJ) with blaOxa-23 and an AR with blaOxa-23 and blaoxa-58 were detected in 2 Indian centers, while an A. johnsonii with blaoxp-4 and A. calcoaceticus (ACA) with blaoxa-58 were identified in the Philippines and China, respectively. ISaba1 and ISaba3 surrounded blaoxa-23 from AJ and blaoxa-58 from AR and ACA, respectively. The AR showed a putative O-ssigalogycoprotein endopeptidase-encoding gene upstream of blaoxa-23; gene expression was not detected; and blaoxa-23 and blaoxa-58 were located on the chromosome and plasmid, respectively. Susceptibility to polymyxin and tigecycline (≤ 2 mg/L; no breakpoint criteria) was ≥ 98.9%.

Conclusions: High dissemination of OXA genes was detected, emphasizing their ability to spread among AC. The data suggest AR may be a natural reservoir for blaoxa-23, blaoxp-4 has been previously detected in Hong Kong, Australia and now Philippines, highlighting spread in APAC.

doi:10.1016/j.ijid.2008.05.283