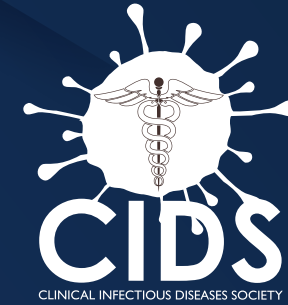


CIDSCON 2023

7th - 9th July 2023 - Chennai



This Certificate is awarded to

Dr. Amol Vinod Shindikar

for having won the **Second Prize** in **Poster Presentation**

titled **Widely-Marketed Irrational β -Lactam/ β -Lactamase Inhibitor**

Combinations in India Lack Activity Against Multi-centric Contemporary

ESBL-Producing Clinical Isolates

during the 13th Annual Conference of Clinical Infectious Diseases Society, India

held from 7th - 9th July 2023 at Chennai

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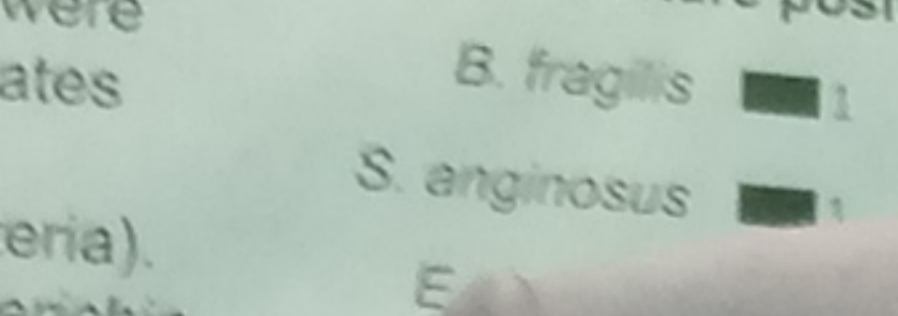
Spectrum of Pyogenic Liver Abscess at a Tertiary Care Centre in Eastern India

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An important clinical entity with a significant mortality rate both in children and adults. Complications like rupture and perforation resulting in peritonitis. To determine the bacterial aetiology of PLA as it leads to better management. A cross-sectional study was conducted between July 2018 and June 2019. 100 provisionally diagnosed cases of LA were included. Pus aspirate was obtained which was subjected to Gram stain and culture using standard techniques. Sensitivity testing by Kirby Bauer disc diffusion method was performed.

Figure 1: Various organisms isolated from culture positive liver abscess



1. Introduction

- Globally, piperacillin/tazobactam (TZP) (i.v.), amoxicillin/clavulanic acid (oral & i.v.), ampicillin/sulbactam (i.v.) and ticarcillin/clavulanic acid (i.v.) are the scientifically developed and widely used as beta-lactam and beta-lactamase inhibitor (BL/BLIs) combinations.
- With the intent of tackling ESBLs, in India several other BL/BL combinations (e.g. cefotaxime plus tazobactam/sulbactam, ceftriaxone plus tazobactam/sulbactam, cefoperazone plus tazobactam/sulbactam) are marketed for which no scientific data is available to support dose, clinical safety, clinical efficacy as well as antimicrobial susceptibility testing methods.
- Wider use of these irrational BL/BLIs is a serious concern as they carry high risk of resistance selection and would compromise clinical outcome.
- Objective of the present study was to determine the activity of various combinations against a set of ceftriaxone-resistant (ESBL phenotype) Enterobacterales enriched with non-susceptibility to TZP.

2. Methods

- A total of 99 *E. coli* and 40 *K. pneumoniae* with ESBL-phenotype (resistant to ceftriaxone and susceptible to meropenem) were included in the study.
- Isolates were collected from tertiary-care hospitals in Chhatrapati Sambhajnagar, Maharashtra and identified using VITEK® 2 (bioMérieux, USA).
- MICs of irrational BL/BLIs were determined by broth microdilution method.
- In the same study, MICs of TZP and two rationally developed BL/BLIs (ceftolozane/tazobactam [TOL/TAZ] & high-dose cefepime/tazobactam 2 + 2 g, q8h [WCK 4282]) were determined by broth microdilution method as recommended by Clinical and Laboratory Standards Institute (CLSI) M07-A11 guidelines.

4. Conclusions

Susceptibility to TZP is markedly lower compared to meropenem, indicating that TZP is no longer a treatment option for Enterobacterales ESBL infections. The activity of irrational BL/BLIs showed a comprehensive activity against ESBL isolates (<60% coverage). Susceptibility to WCK 4282 (high dose cefepime/tazobactam) was superior to TZP, cefoperazone/sulbactam and ceftriaxone/sulbactam and it was comparable to meropenem. This study highlights the serious risk associated with the use of irrational BL/BLIs for ESBL infections including resistance and thus compromising patient care.

Presented at CIDSCON 2023, July

