

Table

Antibiotic	Change log ₁₀ cfu/mL at 4 h	Change log ₁₀ cfu/mL at 24 h	Number bactericidal	Number with synergy
Ampicillin	-0.5 ± 0.8	-2.0 ± 1.1	1/10	
Ampicillin + Ceftriaxone	-0.1 ± 1.2	-2.2 ± 1.7	3/10	1/10
Ampicillin + Gentamicin	-3.6 ± 1.3	-4.9 ± 0.3	10/10	9/10

Methods. A prospective study was performed at a university hospital in Kuala Lumpur, Malaysia, involving CRE isolates resistant to CZA and ATM. Susceptibility testing results were interpreted using the Clinical and Laboratory Standards Institute (CLSI) breakpoints. A synergy test for both agents [as in Falcone et al. study (CID 2021:72)] was carried out using the double disk synergy (DDS) and the gradient test superposition (GTS) methods. Synergy was considered present when the inhibition zone between the two disks became evident and if CZA reduced the ATM minimum inhibitory concentration (MIC) below its CLSI susceptibility cut-off (≤ 4 mg/L).

Results. Eleven isolates (8 *K. pneumoniae*, 2 *E. coli*, and 1 *K. aerogenes*) from 10 patients were tested. Concordant results were seen for both methods for all the isolates. Synergy was demonstrated with 8 isolates; for 2 of the 3 isolates with no synergy, the MIC of ATM reduced to an intermediate result after GTS. The most common sites of infection were bloodstream infection (4) and intra-abdominal infection (3). Five patients received the CZA-ATM combination (one received two courses of CZA-ATM). Five isolates from four patients demonstrated synergy, and one showed intermediate synergy. The latter received additional IV tigecycline. The median time to CZA-ATM initiation from the index culture was 8 (3-13) days. The median duration of therapy was 21 (6-28) days. Four patients responded favorably to the agents (survived the infection), while the remaining patient died. For those that did not receive CZA-ATM, one received polymyxin-based therapy, one received high-dose, extended-infusion meropenem, and one received no treatment. Only the patient that received meropenem survived the infection. Please refer to Table 1.0 for more detail.

Conclusion. Based on this small sample size, only a 73% synergy rate between CZA and ATM was seen for our CRE isolates resistant to CZA and ATM. Favorable treatment response was seen in those receiving the CZA-ATM combination therapy when synergy was demonstrated.

Disclosures. All Authors: No reported disclosures

Abstract citation ID: ofad500.2421

2810. A synergy test to assess the activity of the Ceftazidime-Avibactam and Aztreonam combination: An experience from a single centre in Malaysia

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Session: 248. Treatment of Antimicrobial-Resistant Infections

Saturday, October 14, 2023: 12:15 PM

Background. Southeast Asia has a high prevalence of metallo- β -lactamase-producing carbapenem-resistant Enterobacterales (CRE). Ceftazidime-avibactam (CZA) and Aztreonam (ATM) combination is one of the preferred therapeutic options against them.

Table 1.0: Details of CZA-ATM synergy cases.

No.	Age	Sex	Comorbidity	Infection details (organism)	Synergy results	Treatment	Outcome
1	76	M	DM, HPT, CCF, CKD, dyslipidemia, and seronegative RA	Hospital-acquired pneumonia (<i>K. pneumoniae</i>)	Present	CZA-ATM for 7 days	Survived
2*	45	M	DM, HPT, and dyslipidemia	Hospital-acquired pneumonia with liver abscess (<i>K. pneumoniae</i>)	Present	CZA-ATM for 6 days	Survived
3*	45	M	DM, HPT, and dyslipidemia	Liver abscess (<i>K. pneumoniae</i>)	Present	CZA-ATM for 28 days	Survived
4	68	M	DM, HPT, IHD, CKD, and stroke	Hip prosthetic joint infection (<i>K. pneumoniae</i>)	Present	CZA-ATM for 28 days, then polymyxin B for 8 days	Died
5	69	M	HPT and CKD	Necrotizing pancreatitis with intraabdominal sepsis (<i>K. aerogenes</i>)	Present	Polymyxin B and ciprofloxacin for 15 days, then Tigecycline and ciprofloxacin for 27 days, then CZA/ATM for 6 days	Died
6	22	F	Down's syndrome with AML	Infected sacral sore (<i>K. pneumoniae</i>)	Present	CZA-ATM for 7 days	Survived
7	69	M	Renal transplant with graft failure	Bacteremia due to renal abscess (<i>E. coli</i>)	Intermediate	CZA-ATM for 21 days + Tigecycline for 12 days	Survived
8	51	M	DM, cholelithiasis	Cholangitis (<i>K. pneumoniae</i>)	Present	No treatment	Died
9	34	M	Severe traumatic brain injury post-MVA	Ventilator-associated pneumonia (<i>K. pneumoniae</i>)	Present	Meropenem for 15 days	Survived
10	69	M	DM, HPT, and IHD	Left foot osteomyelitis (<i>E. coli</i>)	Intermediate	Polymyxin B and meropenem for 7 days	Died
11	31	M	No known medical illness	Severe acute pancreatitis with intraabdominal collection (<i>K. pneumoniae</i>)	Absent	CZA/ATM for 4 weeks, then polymyxin B for 9 days	Survived

Legends: M = male, F = female, DM = diabetes mellitus, HPT = hypertension, CCF = congestive cardiac failure, CKD = chronic kidney disease, RA = rheumatoid arthritis, IHD = ischemic heart disease, AML = acute myeloid leukaemia, CZA = ceftazidime-avibactam, ATM = aztreonam, TBI = traumatic brain injury, GCS = Glasgow coma scale. * These isolates were from the same patient, he received two courses of CZA-ATM therapy.