MY TOP 5

TAKES ON A PAPER TITLED

Efficacy of Ceftazidime-avibactam Plus Aztreonam in Patients With Bloodstream Infections (BSI) due to Metallo-beta lactamase producing Enterobacterales (MBLE)

1

MBLE is difficult to treat

BSI due to MBLE is associated with mortality rates of > 30%. Aztreonam (ATM) is able to inactivate MBLs but cannot be used alone as MBLE can co-produce other enzymes that can destroy it, such as ESBL, KPC, OXA, and AmpC enzymes. Therefore, the addition of avibactam (from ceftazidime-CAZ/AVI) could restore the ATM activity.

2

Population | Intervention | Control | Outcome

P: Adults (≥18 years) with BSI caused by MBLE who were admitted in 1 of the 3 hospitals (1 in Greek and 2 in Italy)
I: CAZ/AVI + ATM (51%)
C: Other (≥1) targeted active antibiotic regimens, which includes colistin-based combo therapy (26.5%)
O: Primary: 30-day all-cause mortality from the index blood culture
Secondary: clinical failure at day 14 and LOS after the BSI

3

Synergy test of ATM & AVI

The synergy between CAZ-AVI and ATM was screened by double-disk synergy test and evaluated by gradient-test superposition method

The combination of 2 antibiotics was considered synergistic if an inhibition zone between the 2 disks became evident and if CAZ-AVI reduced ATM MIC below its susceptibility cutoff.

Intervention arm performed better

4

Primary endpoint:
Lower rate of 30-day mortality
- HR, 0.31 [95% CI, .15–.66]; P = .002

Secondary endpoint:
Lower risk of failure at day 14
- Odds ratio, 0.36 [95% CI, .18–.7]; P = .003

Shorter length of hospital stay
- sHR, 0.48 [95% CI, .29–.78]; P = .003

NB: Polymyxins-based therapy was associated with the worst outcome: 59.3% (16/27) death rate

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Take home message

The CAZ-AVI|ATM regimen was associated with clear survival benefits relative to other currently available therapeutic options, as well as with a lower rate of clinical failure at day 14 and with shorter LOS after the BSI onset