

#ISICEM21: Advances in Resistant Gram-Negative Pneumonia



In an interesting discussion at the 40th ISICEM International Symposium on Intensive Care & Emergency Medicine, Richard Wunderink, Professor of Medicine, Pulmonary and Critical Care Division of Northwestern University's Feinberg School of Medicine and Medical Director, Medical ICU, Northwestern Memorial Hospital, Chicago, discussed rising levels of multi-drug resistance and highlighted the need for new treatments in this field.

He talked about the rapid spread of resistance to carbapenems and new treatments that could be effective against carbapenem-resistant pathogens in pneumonia, including Enterobacteriaceae, *Pseudomonas aeruginosa* and *Acinetobacter* species.

Prof Wunderink discussed new therapeutic options and the recent progress in the development of newer beta-lactam agents and combinations with beta-lactamase inhibitors. He also spoke about meropenem-vaborbactam, the first combination of a carbapenem with a beta-lactamase inhibitor. The TANGO II study has shown high clinical cure rates and reduced nephrotoxicity with this combination. However, meropenem-vaborbactam is only effective against certain classes of carbapenemases.

Prof Wunderink also spoke about CAZ-AVI - a combination of ceftazidime, a third-generation cephalosporin with avibactam, a non-beta lactic semisynthetic with beta-lactamase inhibitor activity. The REPROVE trial comparing CAZ-AVI to meropenem showed that CAZ-AVI was non-inferior to meropenem in mortality and clinical cure endpoint. Thus, this could be a valuable new tool against CREs and *P. Aeruginosa*.

Another drug effective against *P. Aeruginosa* is ceftolozane, a beta-lactam often used in combination with tazobactam, a beta-lactamase inhibitor. The ASPECT-NP trial found that ceftolozane-tazobactam was non-inferior to meropenem treatment in terms of mortality and clinical cure.

Prof Wunderink discussed yet another new agent - cefiderocol, a siderophore cephalosporin, a broad-spectrum agent. The CREDIBLE-CR trial showed that cefiderocol had similar clinical and microbiological efficacy. Mortality was higher in the cefiderocol group in patients with *Acinetobacter* infections. The APEKS-NP trial found cefiderocol to be non-inferior in terms of mortality and tolerability to meropenem treatment.

Overall, Prof Wunderink presented an overview of clinical advances in this field and highlighted new developments that could help improve clinical outcomes.

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