



## Symposium 17.1

### Multi-resistant or Pan-resistant *Acinetobacter* spp.

**Koh Tse Hsien**

Department of Pathology  
Singapore General Hospital, Singapore

The genus *Acinetobacter* is ubiquitous in the environment. Community-acquired *Acinetobacter* spp. retain susceptibility to several antimicrobials. However resistance develops rapidly. Though of relatively low virulence, these bacteria are important causes of nosocomial infection, especially in intensive care and burns units.

When first discovered in *Acinetobacter* spp, the metallo-beta-lactamases were thought to represent the main threat to the utility of carbapenems. However recently, a whole range of OXA beta-lactamases have been found in *Acinetobacter* spp. Surprisingly, some of these beta-lactamases seem to be intrinsic to *Acinetobacter* spp., but not necessarily associated with a resistance phenotype. These possess weak carbapenemase activity which may be upregulated by upstream insertion of insertion sequences with promoter activity. Penicillin-binding protein modifications, multi-drug efflux pumps, and outer membrane porin loss may also contribute to multiple resistance. Recently, an 86-kb resistance island containing 45 resistance genes was found in a strain of *A. baumannii*. This highlights the capacity of this organism to develop resistance to multiple antimicrobials.

*Acinetobacter* spp. are a major challenge for the infection control team because they survive well in the hospital environment. Major clones of multi-resistant *Acinetobacter baumannii* have demonstrated their ability to spread within and beyond individual hospitals.

Infections with multi-resistant *Acinetobacter* spp. pose a therapeutic dilemma. The only new antimicrobial with activity against *Acinetobacter* spp. is Tigecycline. Clinicians are being obliged to re-acquaint themselves with older antimicrobials like the Polymyxins. The optimal therapy for multi-resistant *Acinetobacter* spp remains undetermined.