

# Surveillance in Taiwan using molecular epidemiology for extended-spectrum $\beta$ -lactamase-producing *Klebsiella pneumoniae*

余文良

Yu WL;Winokur PL;Jones RN;Sader HS

摘要

## Abstract

**OBJECTIVE:** To evaluate intrahospital and interhospital clonal dissemination of extended-spectrum beta-lactamase (ESBL)-producing strains of *Klebsiella pneumoniae*. **SETTING:** Eight tertiary-care university hospitals and 16 regional hospitals in Taiwan. **METHODS:** Two hundred eleven confirmed ESBL-producing isolates of *K. pneumoniae* were collected from January 1998 to June 2000. The isolates were characterized by various typing methods, including antibiogram (9 antimicrobial agents), computer-based ribotyping, pulsed-field gel electrophoresis (PFGE), and isoelectric focusing of beta-lactamase. **RESULTS:** Ribotyping identified 70 distinct ribogroups among 200 isolates evaluated. Forty-three of these ribogroups were unique. Eleven ribogroups, comprising 115 isolates, were detected in more than one hospital (interhospital dissemination), whereas 16 groups (42 isolates) were detected in more than one patient within a hospital (intra-hospital dissemination). The combination of ribotyping and PFGE identified two large epidemic clones, which were called 691.5/PFGE-G and 595.7/PFGE-A. These epidemic clones were detected mainly in the hospitals located in the northern and central regions of Taiwan. However, variation of the profiles of antibiograms and isoelectric focusing was apparent within each clone. In addition, isolates with the same isoelectric focusing profile (isoelectric points 7.9, 8.2, and 8.4) and antibiogram (resistance to 9 compounds evaluated) were present among different molecular-typed clones. **CONCLUSIONS:** Our results showed that clonal dissemination (both interhospital and intra-hospital dissemination) is occurring in several regions of Taiwan. Rapid computer-based ribotyping associated with PFGE demonstrated multiple epidemic clones of ESBL-producing *K. pneumoniae* in Taiwan. The combination of phenotypic and molecular methods has proved useful to characterize these epidemic clones.