

Shedding duration of household ESBL-producing, and sequence type 131 escherichia coli among different regions in taiwan.

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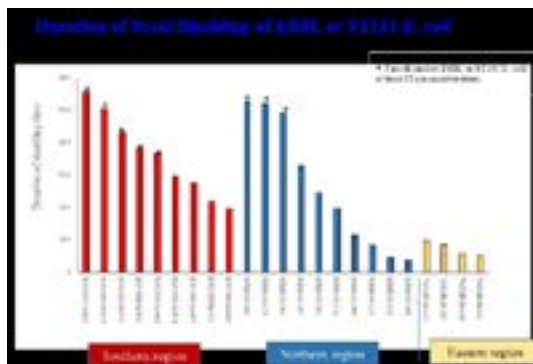
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Background: Broad-spectrum drug-resistant (defined as resistant to 3rd generation of cephalosporines or new quinolones) *Escherichia coli* (*E. coli*), particularly clonal group sequence type 131 (ST131) that produce CTX-M types of extended-spectrum beta-lactamase (ESBL)-producing *E. coli* have dramatically increased worldwide. In our prior studies, we found that the prevalence of community-onset ESBL producing *E. coli* UTIs among infants was similar in urban and rural populations in southern Taiwan. We also found in that study that most infants with UTIs were previously healthy with no apparent risk factors. The increase of ESBL-producing *E. coli* infections may be related to the infection by asymptomatic carriers or environmental circulation of ESBL-containing microorganisms. However, the distributions of resistant *E. coli* in households in different geographic regions of Taiwan are still unknown. Additional prospective multicenter studies are required to investigate the prevalence of community-onset *E. coli* infections in different geographic regions. **Methods:** *E. coli* isolates from the stool of children with uropathogenic or fecal carriage of BDR *E. coli* and their families and from their household environments were prospectively identified in different regions of Taiwan. The *E. coli* isolates identified as BDR were tested for ESBL, and multilocus sequence typing (MLST) was used to detect ST131. Fecal shedding duration of different regions was compared. **Purpose:** This study investigated the prevalence of BDR *E. coli*, particularly for ST131 and ESBL-producing strains, in human carriage, the environment, and households and the duration of shedding of BDR *E. coli* in different geographical regions of Taiwan.

Keywords: *Escherichia coli*, extended-spectrum beta-lactamase, ST131, fecal carriage, antimicrobial resistance

Graphs:

FIG5. Duration of Fecal Shedding of ESBL or ST131 *E. coli* in different regions of Taiwan



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Biography:

Ming-Fang Cheng hold an M.D. from the School of Medicine, China Medical University, Taiwan (1993). Following this, he completed his Pediatric Residency at Kaohsiung Veterans General Hospital (1999). He pursued research fellowships at the National Health Research Institute, Taipei (2001), Children's Hospital Boston, USA (2007), and Harvard University (2007). He progressed from Associate Professor to Professor at the School of Medicine, National Yang Ming University, Taiwan, achieving the latter position in 2023. His recent studies, published in notable journals, have concentrated on ESBL *E. coli* infection in diverse populations, encompassing children, adults, and the environment. His significant contributions include research on bacteremia, virulence genes, colonization, and distribution, resulting in over 70 publications and presentations.