## Prevalence and Risk Factors of Faecal Carriage Fluoroquinolone-Resistant Escherichia coli among Hospitalized Patients in Ado-Ekiti, Nigeria

## Authors : C. A. Ologunde

Abstract : Escherichia coli have been a major microorganisms associated with, and isolated from feacal samples either in adult or children all over the world. Strains of these organisms are resistant to cephalosporins and fluoroquinolone (FQ) antimicrobial agents among hospitalized patients and FQs are the most frequently prescribed antimicrobial class in hospitals, and the level of resistant of E. coli to these antimicrobial agents is a risk factor that should be assessed. Hence, this study was conducted to determine the prevalence and risk factors for colonization with fluoroquinolone (FQ)-resistant E. coli in hospitalized patients in Ado-Ekiti. Rectal swabs were obtained from patients in hospitals in the study area and FQ-resistant E. coli were isolated and identified by means of Nalidixic acid multi-disk and a 1-step screening procedure. Species identification and FQ resistance were confirmed by automated testing (Vitek, bioMerieux, USA). Individual colonies were subjected to pulsefield gel electrophoresis (PAGE) to determine macro-restriction polymorphism after digestion of chromosomal DNA. FQresistant E. coli was detected in the stool sample of 37(62%) hospitalized patient. With multivariable analyses, the use of FQ before hospitalization was the only independent risk factor for FQ-resistant E. coli carriage and was consistent for FQ exposures for the 3-12 months of study. Pulsed-field gel electrophoresis of FQ-resistant E. coli identified conal spread of 1(one) strain among 18 patients. Loss (9 patients) or acquisition (10 residents) of FQ-resistant E. coli was documented and was associated with de novo colonization with genetically distinct strains. It was concluded that FQ-resistant E. coli carriage was associated with clonal spread. The differential effects of individual fluoroquinolone on antimicrobial drug resistance are an important area for future study, as hospitals manipulate their formularies with regard to use of individual fluoroquinolone, often for economic reasons.

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