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## Trimethoprim-sulfamethoxazole resistance in clinical isolates of *E. coli* from UTI patients in Zaria, Nigeria

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The increasing trend of *E. coli* resistance to trimethoprim-sulfamethoxazole (TMP-SMZ) among UTI patients is indeed becoming worrisome, as this first class antibiotic of hope in the last few years is becoming ineffective due to resistance associated with emerging and reoccurrence of *E. coli* infections in UTIs. This study evaluates the resistance pattern of TMP-SMZ resistant *E. coli* from UTI patients in Zaria, Nigeria using standard microbiological methods. The result showed that out of the 80 suspected *E. coli* isolates from UTI patients in 4 selected hospitals in Zaria, 68.75% (55) of the isolates were confirmed as *E. coli* using Macrobat 12E Enterobacteriaceae identification kit. Out of which 58.2% (32) were resistant to TMP-SMZ. High resistance profile of the isolates were observed against amoxicillin and cefpirome (96.9%), followed by cefaxime (78.1), tetracycline (75%), cefpodoxime (68.8), ciprofloxacin and ofloxacin (59.4), chloramphenicol (53.1%), gentamicin (46.9%), aztreonam (31.3%), nitrofurantoin (28.1%) and ceftriaxone (21.9%), the most effective antibiotics were observed to be amikacin (3.1) and imipenem (0%). The isolates were observed to have 100% MDR at MARI $\geq$ 0.2. Molecular analysis using PCR showed that *dfrXII* gene was present in all the 21 (100%) MDR *E. coli* isolates, 85.7% (18) had *sul2* while *dfrIa* and *sul1* genes were absent in all the isolates evaluated in this study. This study showed that high percentage of clinical isolates of *E. coli* was resistant to TMP-SMZ in Zaria metropolis. Hence, there is the need to re-strategize on the surveillance approach, awareness programmes on antibiotics resistance and dispensing of antibiotics in clinics and community pharmacy in order to curb the resistant trend of bacteria to wide antibacterial spectrum like trimethoprim-sulfamethoxazole (TMP-SMZ) among UTI patients in Nigeria.

### Biography

Igwe James Chibueze has completed his PhD in Pharmaceutical Microbiology, MSc in Pharmaceutical Microbiology from Ahmadu Bello University, Zaria, Nigeria) and BSc in Biotechnology from Ebonyi State University, Abakaliki, Ebonyi State. He is currently working as Scientific Officer I (Research Scientist) at the Department of Medical Biotechnology, National Biotechnology Development Agency, Abuja, Nigeria

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