Detection of Antibiotic-Resistant Bacteria in Street-Vended Kola Kenda in Selected Locations in the Colombo District, Sri Lanka: A Preliminary Study

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Kola kenda, a traditional Sri Lankan herbal porridge consumed by vulnerable populations including postpartum women, the elderly, and immunocompromised individuals, poses food safety risks when vendor hygiene is inconsistent. No prior research has examined antimicrobial resistance (AMR) among bacteria isolated from this food. This preliminary cross-sectional study aimed to determine prevalence, antibiotic resistance profiles, and molecular identity of pathogens in street-vended kola kenda in the Colombo district; objectives were to isolate pathogens, assess resistance via Kirby-Bauer disc diffusion, and confirm species using species-specific PCR. One sample each of four varieties (karapincha, welpenella, kowakka, hathawariya) was purchased from five closely situated locations: Moratuwa Old Galle Road, Moratuwa New Galle Road, Mount Lavinia, Bellanwila, and Kohuwala. Each sample was inoculated onto LB agar in duplicates and incubated. Colonies were sub-cultured onto fresh LB agar for pure isolation and Gram stained for morphological characterization. For AST, pure colonies were suspended in LB broth, incubated to visible turbidity, and spread onto LB agar for Kirby-Bauer disc diffusion against amoxicillin (10 μg), ciprofloxacin (5 μg), and gentamicin (10 μg), interpreted using CLSI breakpoints. DNA was extracted via boiling lysis; species-specific PCR with agarose gel electrophoresis detected *E. coli* and *S. aureus*. Descriptive analysis was applied as sample size was insufficient for inferential statistics. All five samples (100%) showed bacterial contamination, predominantly Gram-negative. Of 17 isolates, resistance was highest to amoxicillin (76%), followed by ciprofloxacin (53%) and gentamicin (41%). Six isolates (35%) were multidrug-resistant (MDR), all from karapincha samples at Moratuwa locations (very high risk; 40%). PCR confirmed *E. coli* in kowakka (Bellanwila) and hathawariya (Kohuwala) samples indicating fecal contamination (high risk; 40%). The welpenella sample from Mount Lavinia had no MDR isolates or *E. coli* (lowest risk; 20%). No *S. aureus* was detected in any samples. These findings provide preliminary evidence that street-vended kola kenda in Colombo can harbour antibiotic-resistant and fecal-pathogenic bacteria. The small sample size is a limitation; findings cannot be generalized beyond these locations. Future studies should use larger, geographically diverse samples. Routine microbiological surveillance, improved hygienic practices during preparation, processing, and handling, and consumer AMR awareness campaigns are urgently recommended.

Keywords: antibiotic resistance*, E. coli,* kola kenda, PCR, street food safety