

Abstract

The emergence of resistance to antimicrobial agents in bacterial pathogens is a worldwide problem that has been associated with inappropriate use in human and veterinary medicine. Between 12th February 2013 and 30th July 2014 from a total of 420 children under 5 years of age with diarrhea were analyzed for bacterial enteric pathogens of which *E. coli* isolates were characterized by Polymerase Chain Reaction for the presence of virulence genes.

Patients from whom bacterial enteric pathogens were isolated and identified from the 5 satellite sites were 145, Wajir (21), Malindi (42), Kitale (34), Machakos (18) and Busia (30) County Referral Hospitals. Antibiotic susceptibility testing was done on all isolates: pathogenic *E. coli* (55), *Salmonella* (22) and *Shigella* (72) using disk-diffusion methods containing Ampicillin, Cefotaxime, Tetracycline, Erythromycin, Gentamicin, Chloramphenicol, Trimethoprim/Sulphamethoxazole, Ciprofloxacin, Furasolidine and Nalidixic acid. *E. coli*, *Shigella* and *Salmonella* isolates showed up to 100% level of resistance to ampicillin, trimethoprim/sulphamethoxazole and erythromycin.

Furthermore, pathogenic *E. coli* revealed tetracycline resistance ranging from 67% to 76% in all sites. Emerging resistance to ciprofloxacin ranged from 14.3% in Wajir to 50.0% in Machakos and gentamycin resistance ranged from 20% in Kitale to 100% in Wajir. *Salmonella* isolates showed levels of resistance ranging from 25% to 100% in Busia and 14% to 100% in Wajir for all the antimicrobials tested.