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Antimicrobial susceptibility patter of bacterial pathogens associated with diarrhea in selected health facilities of Ethiopia

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Background: Diarrheal disease amounts to an estimated 4.1 % of the total global burden of disease and is responsible for the deaths of 1.7 million people every year. Among the bacterial pathogens *Vibrio cholera, Salmonella spp* and *Shigella spp*. are the most serious as they cause severe illness and as they are associated with outbreaks. Since these diarrhoeal diseases are treated empirically, it is important to know the susceptibility pattern of the prevalent pathogens.

Objective: To determine the prevalence and antimicrobial resistance pattern of bacterial pathogens associated with diarrhea to commonly prescribed antibiotics in the country.

Materials and Methods: Stool samples were collected from Akaki Kality sub city, Addis Ababa and Arisi Negele health facilities of Oromia. Samples were collected from every diarrheal patient visiting the health facilities. A structured questionnaire was used for the collection of epidemiological and clinical data. All laboratory investigations were performed using standard microbiological procedures. Antimicrobial susceptibility pattern were determined by using clinical and laboratory standard institute (CLSI) guideline.

Results: Out of the total 850 stool samples, 16.6% were culture positive and most prevalent organism was *Shigella* spp. 15.29% and then *Salmonella* 1.29 and no *V. cholera* were identified. Among the tested antibiotics ampicillin was the highly resisted, *Shigella* spp 61% and *Salmonella* spp 73%. Tetracycline was the second drug to be resisted among the tested antibiotics *Shigella* spp 72% and *Salmonella* spp 18.2% resistant. Chloramphenicol and cotrimoxazole were resisted by (36%) and (46%) of *Shigella* spp respectively. Nine percent and no resistant were seen for cotrimoxazole and chloramphenicol by *Salmonella* spp respectively. The resistance of the isolates for ciprofloxacin and ceftriaxone was from 3% to zero.

Conclusion and recommendation: Increased percentage of Antimicrobial drug resistant is seen for the commonly used antimicrobial drugs. Antimicrobial surveillance is recommended for *Salmonella* and *Shigella* spp as to support empirical treatment.

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