Bacterial resistance profile in diarrhoeal infections in Bobo Dioulasso and Dano, Burkina Faso

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Abstract

Diarrhoea is a frequent reason of consultation, especially in developing countries where fecal and food hygiene is unstable. In Burkina Faso, the incidence of diarrhoeal diseases had been estimated at between 6 and 8 episodes per child per year among children under 5 years of age. The treatment of these diarrheas, some of which are of bacterial origin, is very often done blindly. As a result, antibiotic resistance is increasing. This resistance has become a major emerging public health problem, particularly in developing countries, of whom Burkina Faso is a part. Its increase constitutes a limit in the therapeutic management of a large number of infectious bacterial diseases. The aim of our study is to determine the resistance profile of bacteria identified in diarrhoea on patients of all ages received at the Souro Sanou University Hospital Centre (CHUSS) of Bobo Dioulasso and at the Medical Center with Surgical Antenna (CMA) of Dano (rural area). From February 2018 to September 2019, Out of a total of 271 stools collected, 33 bacterial pathogens (33/242) were isolated from our study. The isolation technique was the standard microbiological method. The identification and sensitivity test for antibiotics was performed using the automated system Vitek 2 Compact 60. From all the bacteria isolated, 24.24% came from CMA of Dano and 75.76% from Bobo Dioulasso's CHUSS. The majority of positive samples came from paediatrics (90.91%). Of all isolated bacteria, 96.43% were *Escherichia coli* strains in children under 02 years of age and 3.57% *Salmonella enterica ssp enterica* in adults. The isolated pathogens had high resistance to Ampicillin (92.86%), Ticarcillin (92.86%), and Amoxicillin clavulanic acid (75%). The most common resistance phenotypes were Extended-Spectrum β-Lactamase-producing (ESBL) (57.14%) followed by Penicillinases (45.83%) and Cephalosporinases (4.17%). Amikacin was 100% active on isolated bacteria. We also noted that imipenem was active (100%) on all isolated strains but only 64.29% of the strains were sensitive to cefotaxime and 75% to cefoxitin. 87.5% of BLSE phenotypes and 45.43% of isolated penicillinases were from diarrhea received from pediatrics. Our results require us to further our work by serotyping *Escherichia coli* strains isolated from these children, to strengthen the monitoring of pathogen resistance profiles for an improvement of therapeutic management.

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Biography

Ange Oho Roseline BADJO is a student in Bacteriology and Virology at the Catholic University of West Africa in Bobo Dioulasso (UCAO/UUB). She has been doing a Master's internship since 2018 as part of the ANDEMIA project (African Network for Improved Diagnostics, Epidemiology and Management of Common Infectious Agents) funded by the German Government. Within the framework of this project, it carries out biological analysis activities, particularly in bacteriology and molecular biology. She is currently working on her master's degree on the Contribution of molecular biology to the monitoring of the etiological diagnosis of gastroenteritis in patients of all ages in Burkina Faso.

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Notes/Comments: