

DRUG RESISTANCE AND SUSCEPTIBILITY PROFILE OF BACTERIAL AND FUNGAL ISOLATES FROM STOOL SAMPLES IN YAOUNDE, CAMEROON

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BACKGROUND

The diseases associated with these infections, including diarrhea, significantly affect children and continue to be the cause of morbidity and mortality observed in developed countries and even more so in the third world. The objectives of this study were to present the profile of the germs involved in intestinal infections in Yaoundé between 2010 and 2020, to analyze the association between these germs with the sex and age groups of the study subjects and to present the profiles of sensitivity and drug resistance of species isolated from stool samples during the same period

METHODOLOGY

The study was retrospective and observational. It took place from January 04, 2010 to January 07, 2020 in Yaounde at the Centre Pasteur of Cameroon. After collection of stool samples, laboratory analyzes focused on macroscopic study, isolation and identification of bacterial and fungal species and then performing an antimicrobial susceptibility test by the diffusion method. The automated method using the Vitek 2–compact automaton was also used in order to highlight drug susceptibility and resistance profiles

RESULTS

40,339 stool samples were analyzed during the study period with a prevalence of intestinal infections of 8.1% (3284 samples positive for the presence of a bacterial or fungal species) About 40 antibiotics and 8 antifungals were used. The greatest resistance was observed for drugs which inhibit the synthesis of bacterial envelopes, nucleic acids, folic acid and proteins. The most resistant species were : *Shigella flexneri* (81.0% resistance to ticarcillin) ; *Campylobacter coli* (91.7% resistance to cefatrizine) ; *Campylobacter lari* and *Vibrio cholerae* (100% and 92.4% resistance to nalidixic acid) ; *Shigella dysenteriae A2* and *Shigella sonnei* (100% and 96.1% resistance to cotrimoxazole) ; *Vibrio cholerae* (82.1% resistance to Colistin). For fungi, *Candida albicans* was the most represented and showed a high sensitivity for most of the antifungal agents used

Antibiotics	Isolated bacteria (No.)								
	<i>Salmonella typhimurim</i> (n=36)	<i>Shigella boydii</i> (n=45)	<i>Shigella dysenteriae A1</i> (n=11)	<i>Shigella dysenteriae A2</i> (n=15)	<i>Shigella flexneri</i> (n=468)	<i>Shigella sonnei</i> (n=51)	<i>Shigella sp</i> (n=46)	<i>Vibrio cholerae</i> (n=459)	
	%I/%R/%S								
PEN	NA	NA	NA	NA	NA	NA	NA	NA	
AMP	NA	NA	0/0/9.1	NA	0/1.3/0.2	0/0/3.9	NA	NA	
AMO	2.8/30.6/66.7	8.9/57.8/31.1	0/63.6/27.3	6.7/73.3/20.0	1.5/83.3/12.4	7.8/5.9/82.4	4.3/47.8/47.8	29.2/48.8/14.6	
AMC	5.6/19.4/75.0	15.6/22.2/57.8	9.1/45.5/45.5	13.3/33.3/53.3	19.0/54.3/24.8	5.9/3.9/90.2	8.7/26.1/60.9	46.6/30.3/15.7	
TIC	2.8/27.8/66.7	0/46.7/48.9	0/45.5/54.5	6.7/73.3/20.0	0.4/81.0/15.4	2.0/0/94.1	0/43.5/54.3	0.2/0.4/0.7	
TCC	NA	NA	NA	NA	0/1.1/0.9	0/0/3.9	NA	NA	
PIC	NA	0/0/2.2	0/0/9.1	NA	0/3.6/1.3	0/0/3.9	NA	NA	
TZP/PIT	NA	NA	0/0/9.1	NA	0/0/2.8	0/0/3.9	NA	NA	
IMI	0/0/36.1	0/0/17.8	0/0/18.2	0/0/6.7	0/0/22.6	0/0/23.5	0/0/30.4	NA	
CFT	8.3/5.6/77.8	17.8/4.4/75.6	0/0/81.8	13.3/0/86.7	9.8/2.8/82.5	13.7/2.0/76.5	4.3/8.7/80.4	8.7/2.8/77.8	
Isolated organism (No.)	%I/%R/%S								
	MIC	ECO	KET	FLU	AMB	NYS	VRC	CLO	
<i>Candida albicans</i> (n=1062)	2.4/0.5/88.2	1.3/0.3/86.4	0.6/0.3/82.2	0/0/2.4	0.3/10.2/78.2	0.1/3.6/84.5	0.1/0.1/1.3	3.4/1.2/81.9	
<i>Candida sp</i> (n=342)	6.7/0/83.3	4.4/0/83.0	2.3/0/87.1	0/0/2.9	1.2/28.1/62.9	0.3/3.8/84.8	0.3/0/3.2	10.5/3.5/75.4	
Isolated organism (No.)	%I/%R/%S								
	MIC	ECO	KET	FLU	AMB	NYS	VRC	CLO	

CONCLUSION

In the light of the results of this study, it is essential to extend the surveillance of the resistance of strains to antibiotics in other regions of Cameroon to define the therapeutic strategies adapted to the epidemiological data in our context.

KEYWORDS

intestinal pathologies, antimicrobial susceptibility test, Vitek 2-compact, surveillance, Cameroon