Prevalence of Antimicrobial Resistance among Clinical Isolates of Bacteroides fragilis group in Canada in 2010-2011: CANWARD Surveillance Study

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INTRODUCTION

Background: Bacteroides fragilis group are important human pathogens that are most frequently associated with intra-abdominal infections and wound infections. It is recognized as one of the greatest threats to patients due its ability to cause recurrent, persistent, and aggressive infections. However, susceptibility data for this species have not been published for Canada. The present study was therefore designed to examine antimicrobial susceptibilities of B. fragilis group isolates from hospitals across Canada in 2010-2011.

MATERIALS & METHODS

B. fragilis group isolates were collected by five Canadian hospital laboratories from January, 2010 to August, 2011 and shipped to the National Microbiology Laboratory (Health Sciences Centre, Winnipeg, MB). The isolates were antimicrobial susceptibility tested using the Clinical and Laboratory Standards Institute (CLSI) broth microdilution method (M100-S16). The antimicrobial agents used included ampicillin-sulbactam, ceftazidime, ceftriaxone, cefotaxime, piperacillin-tazobactam, clindamycin, moxifloxacin, and metronidazole. MICs were interpreted using breakpoints published in the 2010-2011 CLSI guidelines. A consensus panel of experts reviewed the final antimicrobial susceptibility data for quality assurance.

RESULTS

In this study, a total of 247 B. fragilis group isolates were collected from hospitals in Canada. The susceptibility testing results were interpreted using broth microdilution method and the standard CLSI breakpoints. The susceptibility patterns of B. fragilis group isolates from different regions of Canada were compared.

The results indicated that 100% of the B. fragilis group isolates were resistant to clindamycin and metronidazole. The susceptibility rates of the isolates to other antibiotics were as follows:

- Ampicillin-sulbactam: 21% resistant
- Ceftazidime: 20% resistant
- Ceftriaxone: 19% resistant
- Cefotaxime: 16% resistant
- Piperacillin-tazobactam: 55% resistant
- Clindamycin: 100% resistant
- Moxifloxacin: 89% resistant
- Metronidazole: 100% resistant

CONCLUSIONS

- Metronidazole, piperacillin-tazobactam, imipenem, and clindamycin were the agents with the greatest susceptibilities (all 100%) against B. fragilis group isolates collected in Canada. Imipenem was the only agent with a susceptibility rate of 100% against all B. fragilis group isolates from different regions.

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