Introduction

New IV antimicrobials, such as ceftobiprole and ceftolozane/tazobactam, have recently become available to clinicians across Canada. IV fosfomycin, IV letamivulin and other new IV antimicrobials will soon also become available in Canada. It is expected that the majority of the usage of these new IV antimicrobials is and will be by infectious diseases/medical microbiology practitioners. In addition, it is expected that usage will be limited initially to select patients and expand over time, as has occurred with other new antibiotics that were previously introduced in Canada (e.g. daptomycin and fidaxomycin). As well, it is expected that usage will not be limited to the current Health Canada approved indications but may also be used for potential future indications (i.e. off label) based on the clinical judgment of treating clinicians.

The CLEAR registry is an initiative by the Canadian Antimicrobial Resistance Alliance (CARA). CLEAR is a new, national usage registry platform that enables the accumulation of knowledge regarding the clinical usage of IV ceftobiprole and ceftolozane/tazobactam across Canada. Once other new IV antimicrobials receive Health Canada approval, more questionnaires will come online.

Materials and Methods

An IV ceftobiprole usage questionnaire was developed using the input of infectious disease/medical microbiology specialists (physicians and pharmacists) across Canada. The CLEAR registry protocol/questionnaire was submitted and received approval by the Human Ethics Committee at the University of Manitoba (Winnipeg, Canada – April 2019).

Using the web-based research data management program, REDCap<sup>TM</sup>, clinicians (physicians and clinical pharmacists) responded directly to the usage questionnaire online starting June 2019. Clinicians were sent an email every 2 months encouraging their participation in CLEAR. A series of drop-down menus and short answer questions allowed for rapid (~3 minutes) completion of the survey thereby encouraging clinicians to complete usage questionnaires for as many patients as possible. The REDCap<sup>TM</sup> online survey link (https://se.gc/CLEARceftobiprole) was distributed via email to some > 270 CLEAR participants (members of AMMI and CSHIP). The CLEAR ceftobiprole questionnaires were tabulated as of April 15, 2020 and results presented are based on 27 patient treatment surveys.

Results

Below are the cumulative tabulated results of the questions asked in the CLEAR ceftobiprole usage survey questionnaires as of April 15, 2020. The following tables are based on a total of 27 patient treatment surveys (n = 27).

1. Cefotobiprole was used to treat a variety of infections including endocarditis, healthcare-acquired bacterial pneumonia and bone and joint infections with the majority of patients having bacteremia
2. Cefotobiprole was almost exclusively used for the treatment of infections caused by MRSA
3. Cefotobiprole was primarily used due to failure of previous antibiotics
4. Cefotobiprole was frequently used without antimicrobial susceptibility testing
5. Cefotobiprole was frequently combined with a second MRSA agent such as daptomycin and vancomycin
6. The most common IV dosage administered was 500mg Q8H and the most common administration was using prolonged infusion ≥2 hours (on label 2 hours)
7. Cefotobiprole was frequently used for durations >10 days
8. Cefotobiprole treatment was associated with high rates of microbiological and clinical success
9. Adverse events were reported in only 3.7% of patients, which is consistent with the well established safety profile of ceftobiprole

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Survey Access

CLEAR – ceftobiprole link https://is.gc/CLEARceftobiprole