

Introduction

Over the past several years in Canada, when new IV antimicrobials are approved and introduced onto the market, they are used primarily by infectious diseases/medical microbiology specialists and frequently used to treat “off-label” infectious indications. There is commonly limited data sharing between clinicians regarding why they chose to use these new IV antimicrobials (i.e., because of failure, resistance, or adverse effects associated with use of other antimicrobial agents), the types of infections treated, and how (i.e., dosage regimen, duration of therapy, as monotherapy or in combination with one or more other antimicrobial agents) they use new IV antimicrobial agents in real world scenarios.

The CLEAR (Canadian LEadership on Antimicrobial Real-life Usage) registry is an initiative coordinated by the Canadian Antimicrobial Resistance Alliance (CARA). CLEAR is a national usage registry platform that enables the accumulation of knowledge regarding the clinical usage of new IV antimicrobials recently introduced into the Canadian marketplace. In this study, CLEAR is accumulating data on the usage of IV ceftobiprole across Canada.

CLEAR also has IV ceftolozane/tazobactam, IV dalbavancin, and IV fosfomycin in the registry. Links to access these surveys: <https://rcsurvey.radyfhs.umanitoba.ca/surveys/?s=WHWT7RDK7X>; <https://rcsurvey.radyfhs.umanitoba.ca/surveys/?s=TPMWJX98HL>; <https://rcsurvey.radyfhs.umanitoba.ca/surveys/?s=F7JXNDFXEF>

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 to 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™ (Research Electronic Data Capture), clinicians (physicians and clinical pharmacists) responded directly to the usage questionnaire online starting June 2019. The REDCap™ online survey link (<https://rcsurvey.radyfhs.umanitoba.ca/surveys/?s=A8EHM8JJRF>) was distributed via email to >400 CLEAR participants (members of the Association of Medical Microbiology and Infectious Diseases Canada [AMMI] and Canadian Society of Hospital Pharmacists [CSHP]). Clinicians were sent an email every 2-3 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. Clinicians were encouraged to voluntarily complete usage questionnaires for as many patients as possible. The CLEAR IV ceftobiprole questionnaires received by March 7, 2024 were tabulated and results presented are based on 110 patient treatment surveys. The survey link was then disabled as all study objectives have been met.

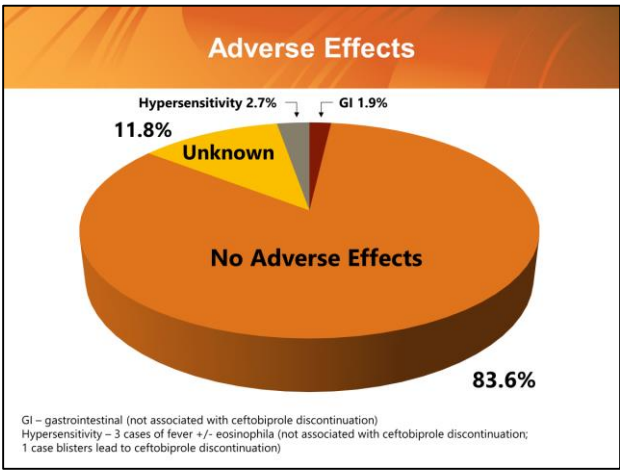
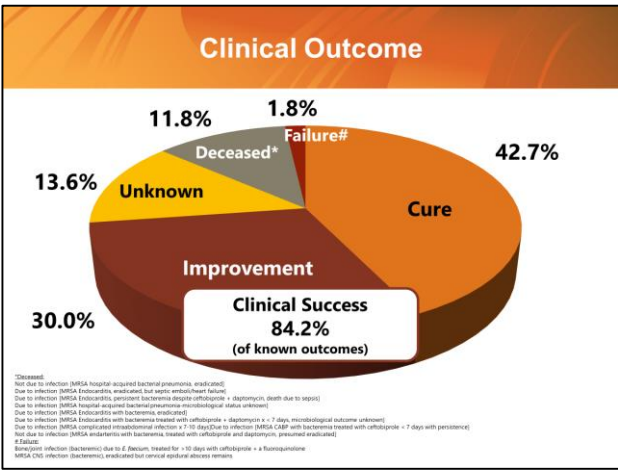
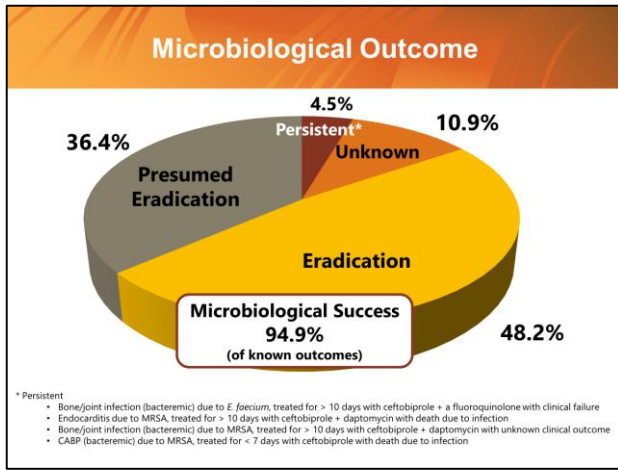
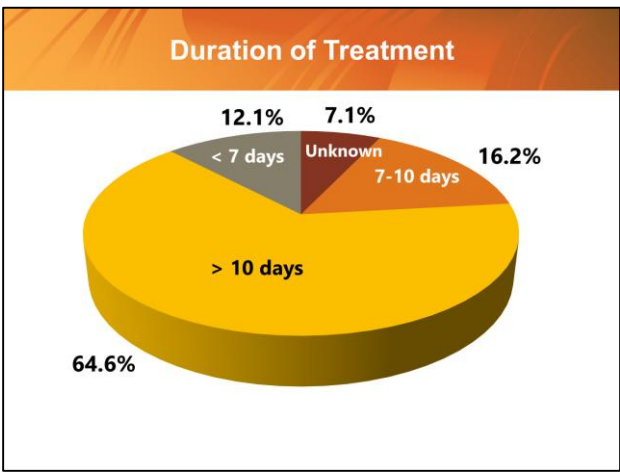
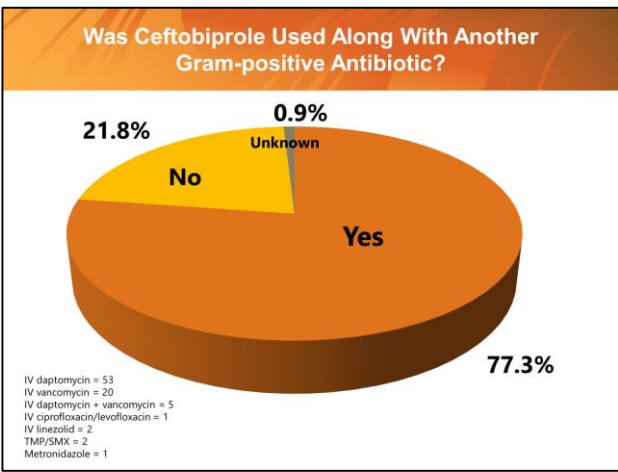
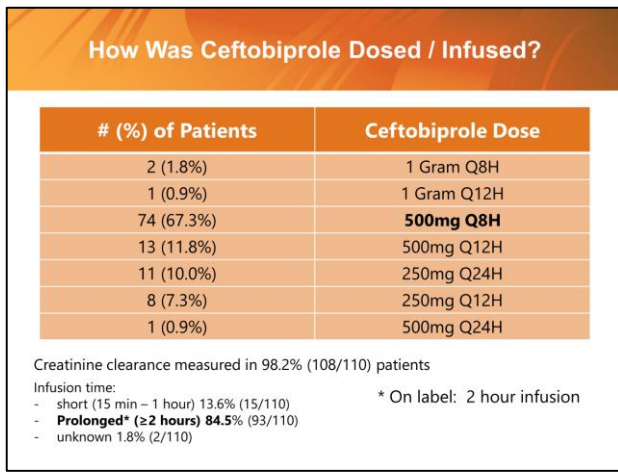
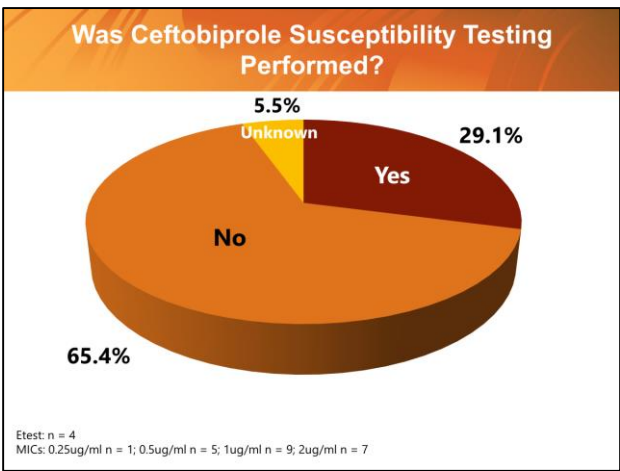
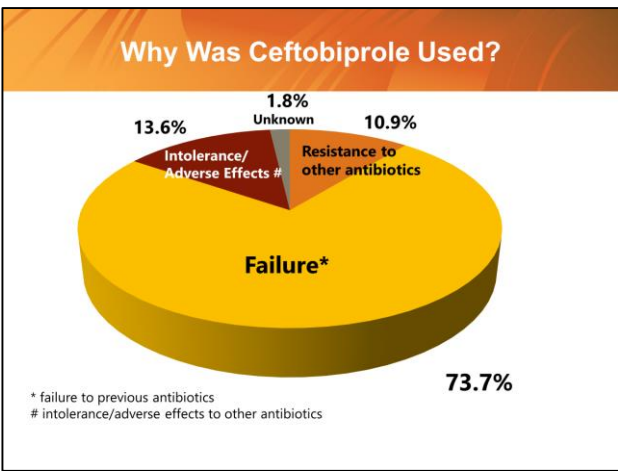
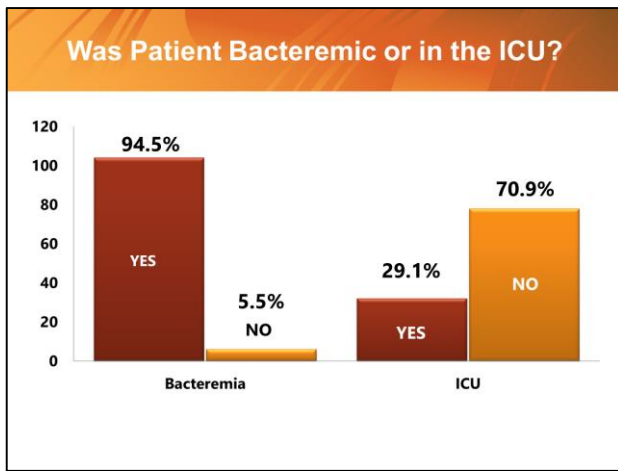
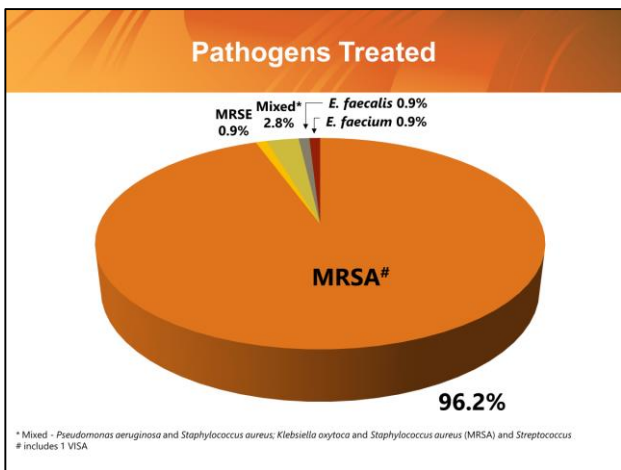
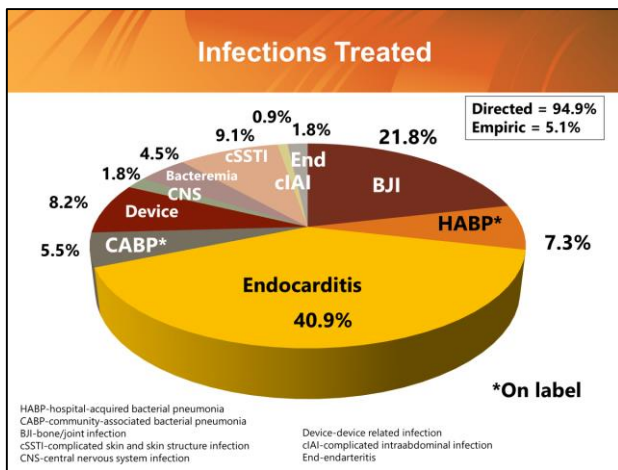
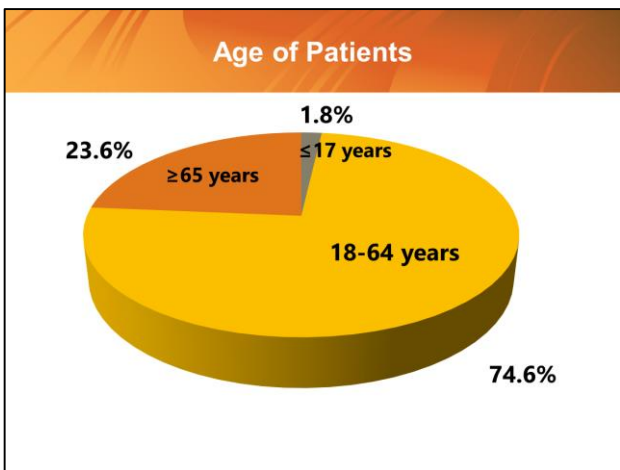
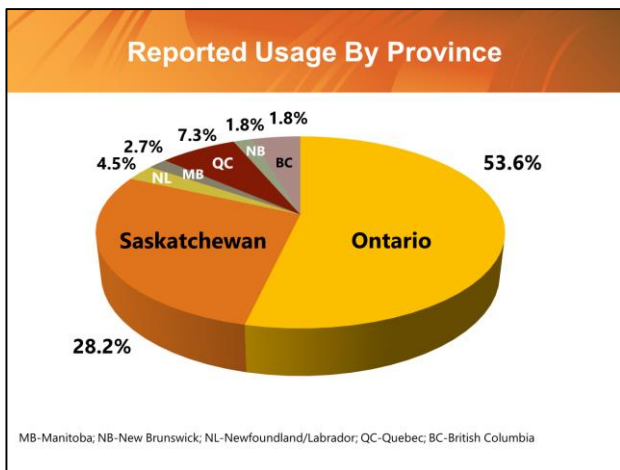
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Results

Below are the cumulative tabulated results of the questions asked in the CLEAR IV ceftobiprole usage survey questionnaires as of March 7, 2024. The following tables are based on a total of 110 patient treatment surveys.



Conclusions

- Ceftobiprole is used to treat a variety of infections including endocarditis, hospital-acquired bacterial pneumonia, community-acquired pneumonia and bone and joint infections with the majority of patients having bacteremia.
- Ceftobiprole is almost exclusively used as directed therapy for the treatment of infections caused by MRSA.
- Ceftobiprole is primarily used due to failure of previous antibiotics.
- Ceftobiprole is used with and without antimicrobial susceptibility testing.
- Ceftobiprole is frequently combined with a second MRSA agent such as daptomycin and vancomycin.
- The most common IV dosage administered is 500mg Q8H and the most common administration is using prolonged infusion ≥2 hours (on label 2 hours).
- Ceftobiprole is frequently used for durations >10 days.
- Ceftobiprole treatment is associated with high rates of microbiological and clinical success.
- Adverse events were reported in only 5% of patients, which is consistent with the good safety profile of ceftobiprole.
- The CLEAR IV ceftobiprole study objectives have been met and the survey link disabled as of March 7, 2024.