



Real-life Experience with Ceftobiprole in Canada: Results from the CLEAR (Canadian Leadership on Antimicrobial Real-life Usage) Registry

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Introduction

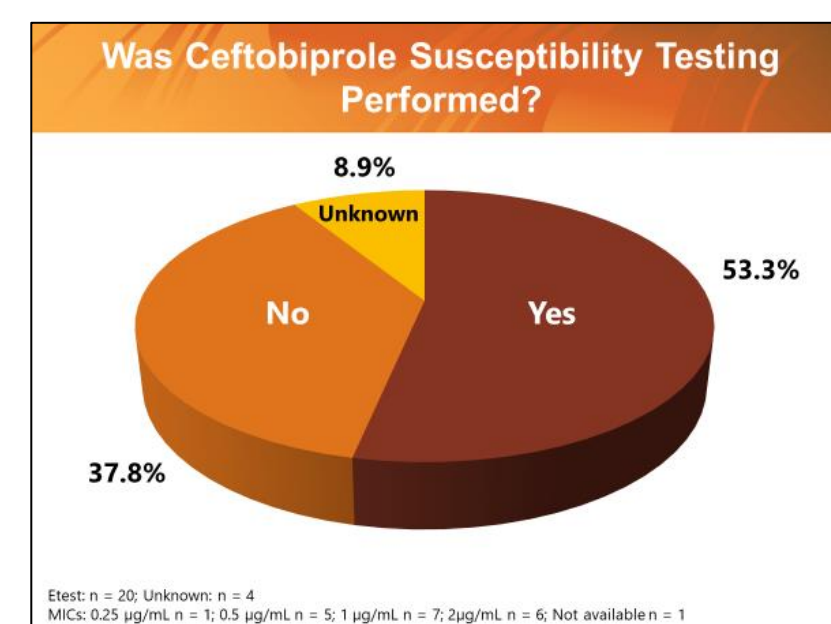
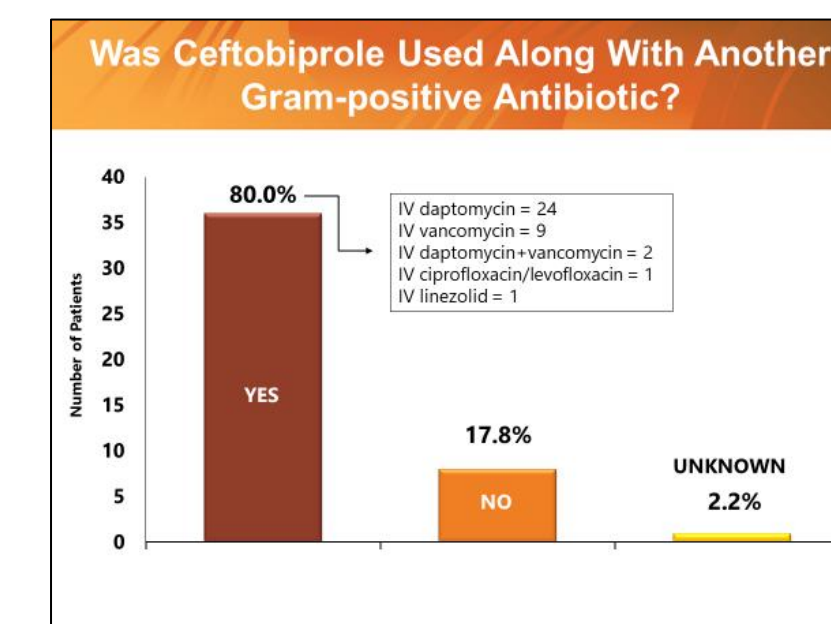
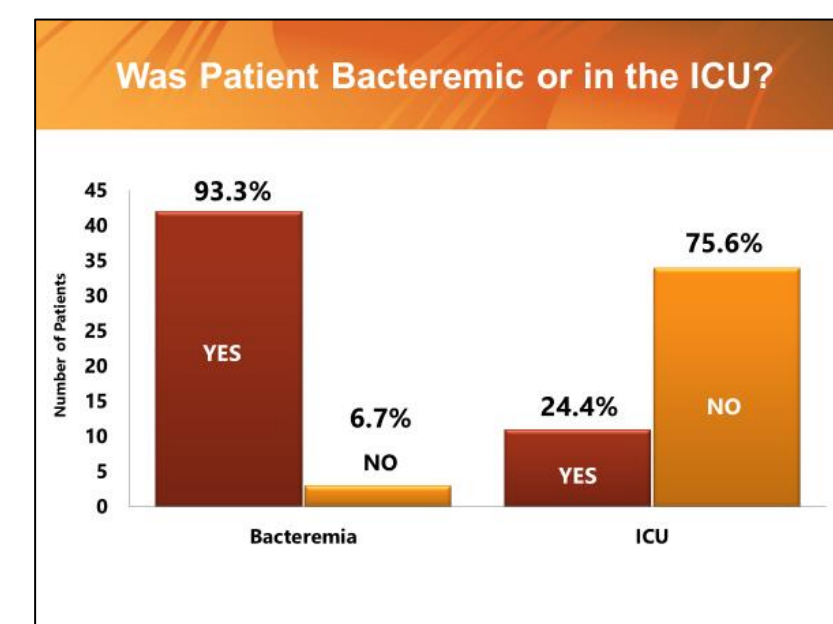
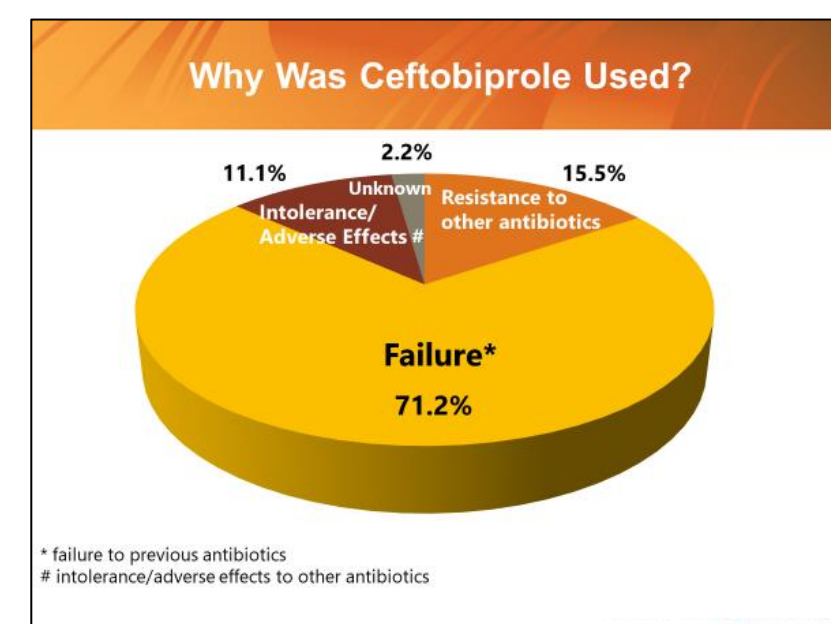
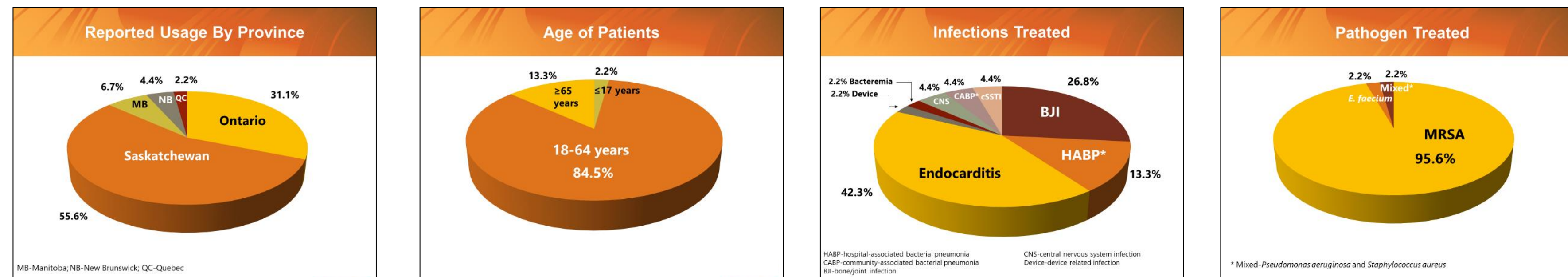
Over the past several years in Canada, when new IV antimicrobials are approved and introduced onto the market, they are used primarily by infectious diseases/medical microbiology specialists and frequently used to treat “off-label” infectious indications. There is commonly limited data sharing between 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 new, 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 (https://is.gd/CLEAR_ceftobiprole). CLEAR also has IV ceftolozane/tazobactam and IV fosfomycin in the registry. Links to access these surveys: https://is.gd/CLEAR_ceftolozanetazobactam https://is.gd/CLEAR_IVfosfomycin

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://is.gd/CLEAR_ceftobiprole) was distributed via email to >270 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 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 ceftobiprole questionnaires received by March 15, 2021 were tabulated and results presented are based on 45 patient treatment surveys.

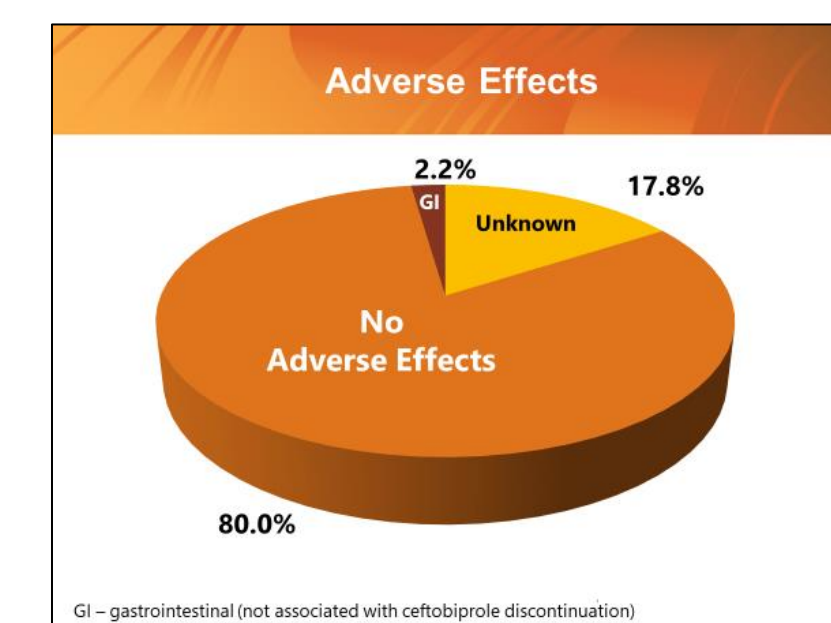
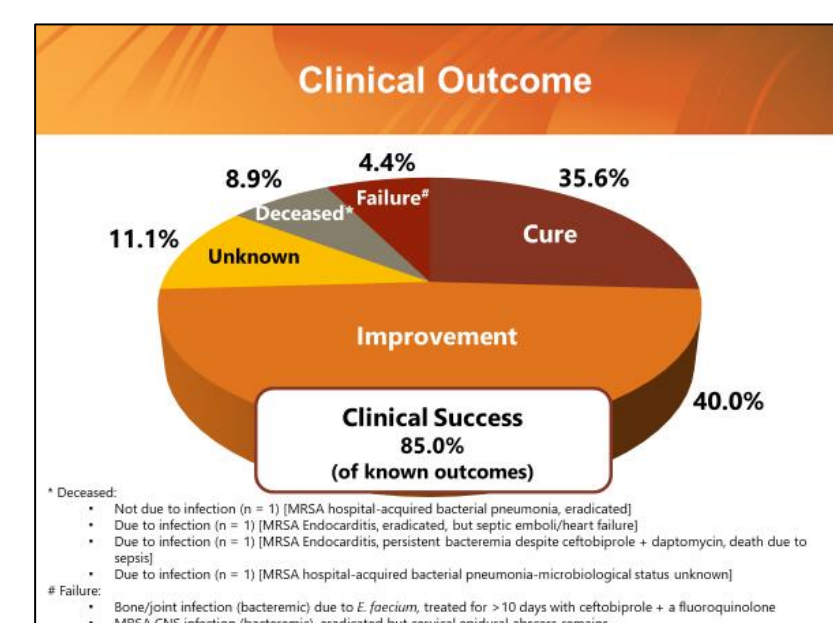
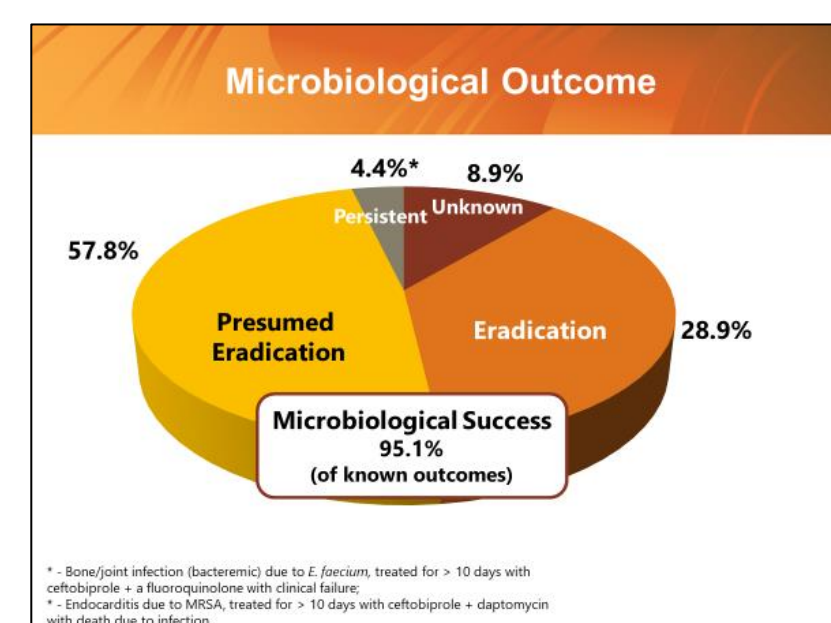
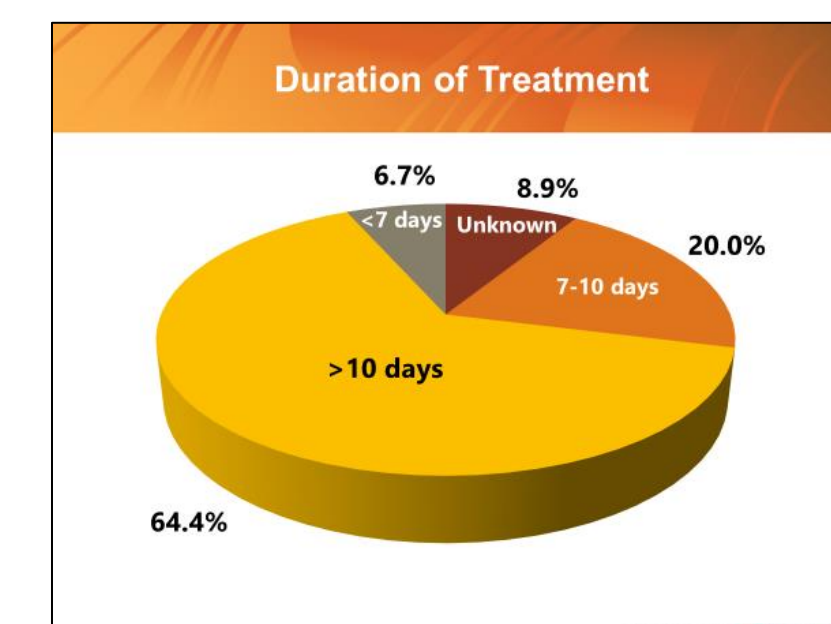
Results

Below are the cumulative tabulated results of the questions asked in the CLEAR ceftobiprole usage survey questionnaires as of March 15, 2021. The following tables are based on a total of 45 patient treatment surveys.



# (%) of Patients	Ceftobiprole Dose
2 (4.4%)	1 Gram Q8H
31 (68.9%)	500mg Q8H
6 (13.3%)	500mg Q12H
5 (11.1%)	250mg Q24H
1 (2.2%)	250mg Q12H

Cratinine clearance measured in 97.8% (44/45) patients
 Infusion time:
 - Short (15 min – 1 hour) 22.2% (10/45) * On label: 2 hour infusion
 - Prolonged* (>2 hours) 73.4% (33/45)
 - Unknown 4.4% (2/45)



Conclusions

- Ceftobiprole is 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
- Ceftobiprole is almost exclusively used for the treatment of infections caused by MRSA
- Ceftobiprole is primarily used due to failure of previously prescribed antibiotics
- Ceftobiprole is frequently used without antimicrobial susceptibility testing
- Ceftobiprole is frequently combined with a second MRSA agent such as daptomycin or vancomycin
- The most common IV dosage administered was 500mg Q8H and the most administration was using prolonged (on label) infusion (≥2 hours)
- Ceftobiprole is frequently used for durations >10 days
- Ceftobiprole treatment is associated with high rates of microbiological and clinical efficacy
- Ceftobiprole is associated with an excellent safety profile

Acknowledgements

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References

CLEAR – ceftobiprole link
https://is.gd/CLEAR_ceftobiprole