



The Management of Patients with Colonization and Infection with Extended-Spectrum β -Lactamase-producing *Enterobacterales* and Associated Risk Factors and Patient Outcomes

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Introduction

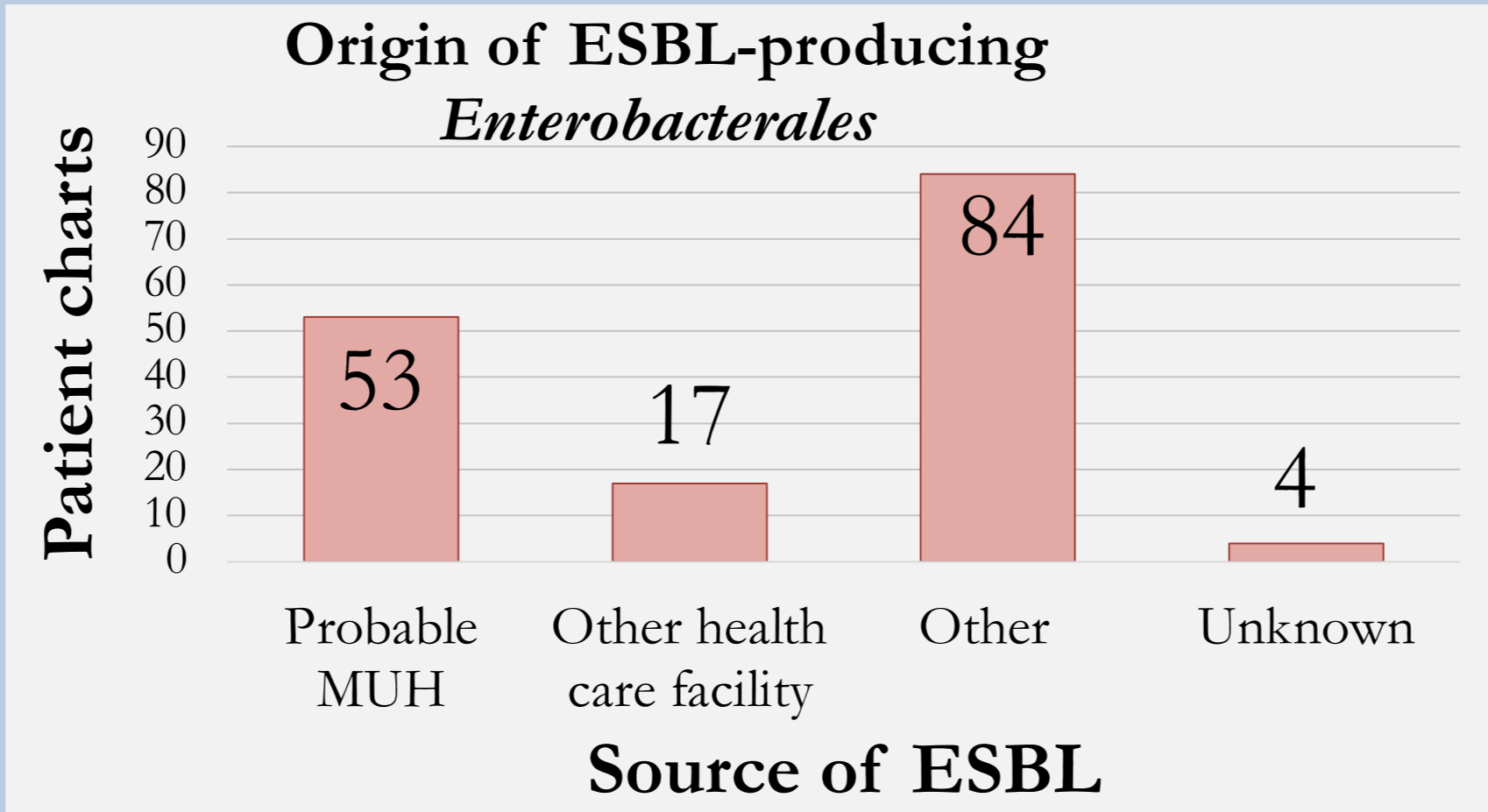
Extended-spectrum beta-lactamase (ESBL)–producing *Enterobacterales* provide a significant threat to health-care systems around the world, and are associated with worse patient-outcomes, longer hospitalizations and greater mortality. This study assessed the management of patients with colonization and infection with ESBL-producing *Enterobacterales* and associated risk factors and clinical outcomes in the Mercy University Hospital (MUH), Cork.

Methods

A retrospective, cross-sectional observational study was performed on all patients who had ESBL-producing *Enterobacterales* grown on the appropriate culture during their MUH admission over a two-year period from September 2017 to December 2019. Patient charts and electronic data were analysed to determine the appropriateness of antibiotic therapy, input from the microbiology or infectious diseases team, ESBL documentation, associated risk factors and clinical outcomes.

Result

Data was collected from 158 patients. Associated risk factors included age ≥ 65 years (n=119, 75.3%), male gender (n=87, 55.1%), recent antibiotic-use (n=48, 36.6%), hypertension (n=54, 40.6%), malignancy (n=38, 28.6%), diabetes (n=24, 18.0%) and COPD (n=23, 17.3%). Residency of a long-term care facility (LTCF) was more associated with infection than colonization (p=0.034). Urinary catheterisation was associated with urinary tract growth (n=19, 61.29%). The mean number of hospital admissions in the previous 12 months was 2.2 times.



Patient Management	Cases	Overall
	n	n (%)
Appropriate antimicrobial therapy	46	46 (100.0)
Input from the microbiology or infectious diseases team	97	79 (81.4)
Documentation in patient chart	94	85 (90.4)

Patient Outcomes	Cases	Overall
	n	n (%)
Length of hospital stay (days): median	158	7
Subsequent hospital admissions in the following 6 months: mean	157	1.35
Mortality	53	8 (15.0)

Conclusion

Results indicate that ESBL-positive patients in MUH received appropriate antimicrobial therapy in accordance with local guidelines and laboratory results, with most having documentation of the positive result in the patient chart and input from the microbiology and infectious diseases team.

References;

1. Bassetti M, Poulakou G, Ruppe E, Bouza E, Van Hal S, Brink A. Antimicrobial resistance in the next 30 years, humankind, bugs and drugs: a visionary approach. Intensive Care Medicine [Internet]. 2017 [cited 2 August 2020];43(10):146-1475. Available from: <https://www.ncbi.nlm.nih.gov/ucc.idm.oclc.org/pubmed/28733718>