

Introduction

To describe the microbiological spectrum, antimicrobial susceptibility, treatment strategies, and visual outcomes of exogenous endophthalmitis over a 10-year period at a single tertiary hospital with focus on aetiology in a centre using intracameral vancomycin 1mg/0.1ml prophylaxis for cataract surgery.

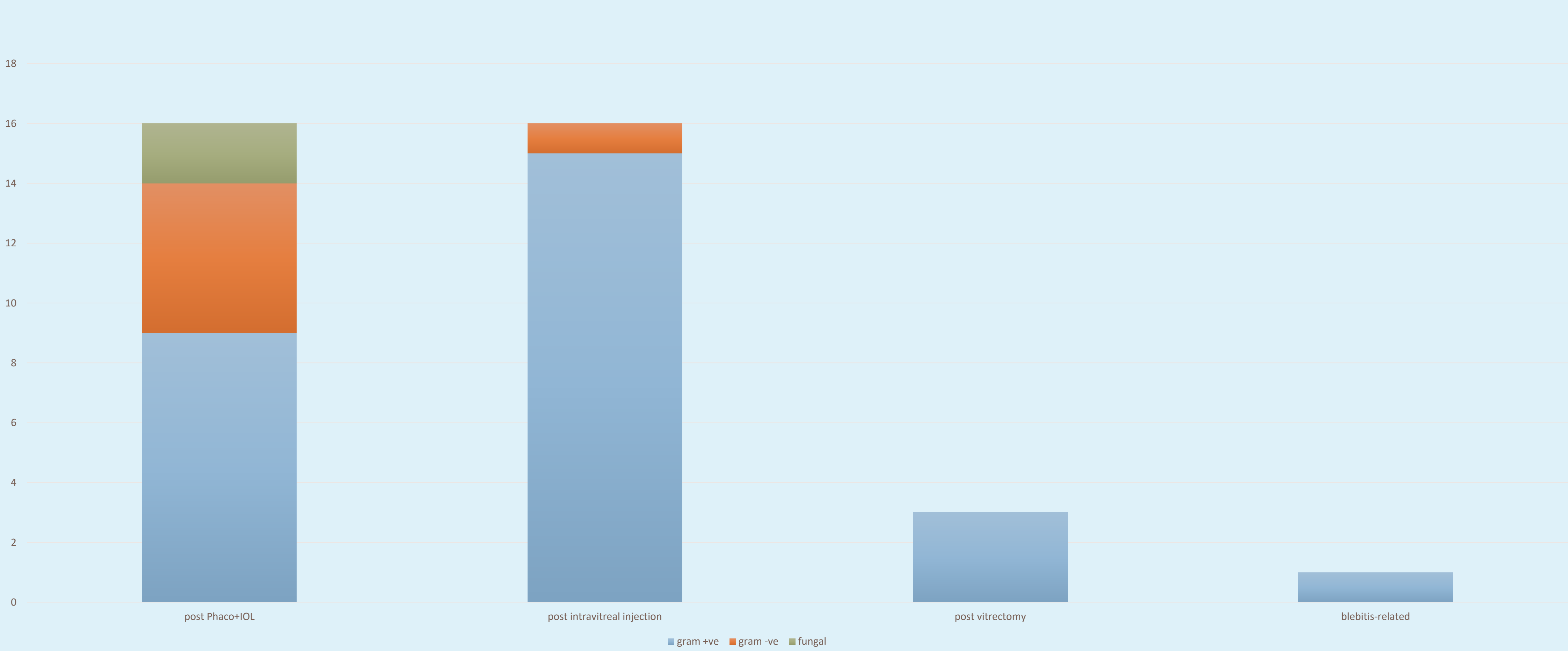
Setting

Norfolk and Norwich University Hospital NHS Foundation Trust, United Kingdom.

Methods

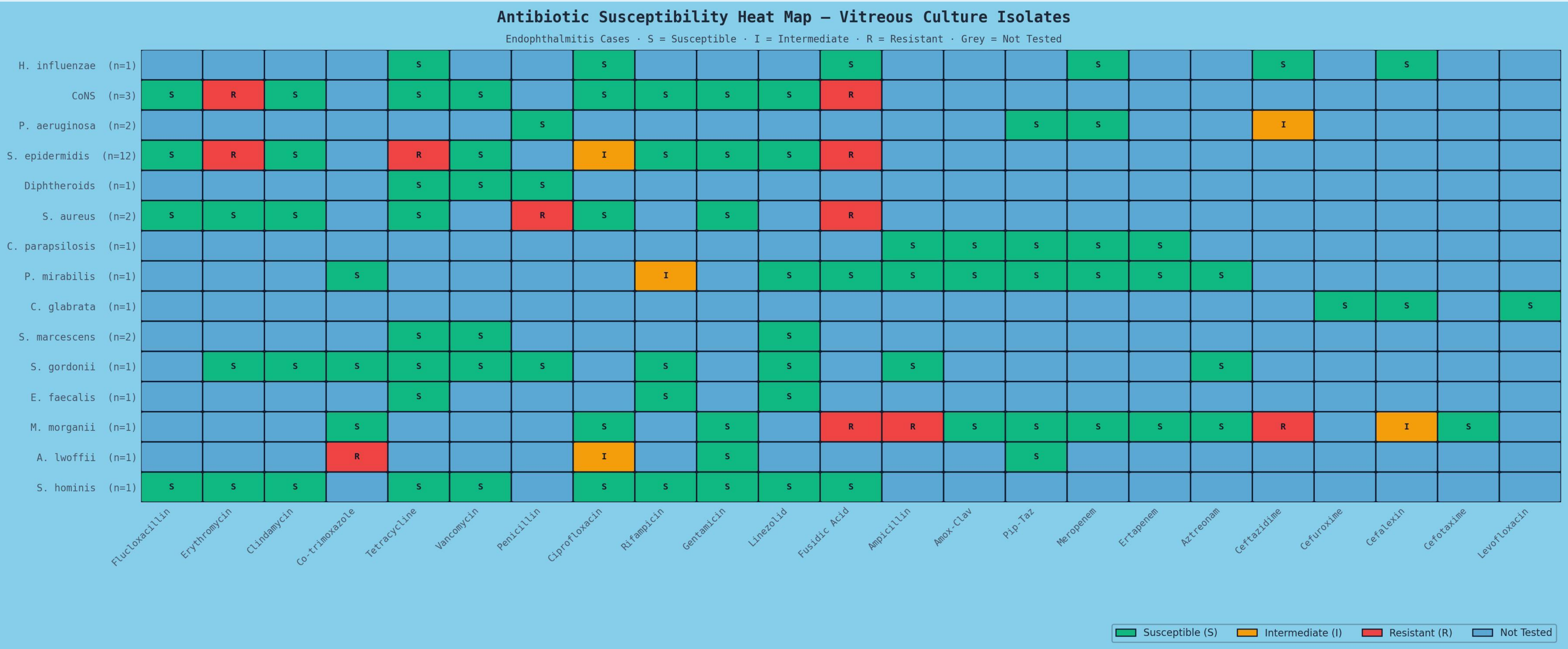
We conducted a retrospective cohort study (2014–2024) at Norfolk & Norwich University Hospital, where standard cataract prophylaxis was intracameral vancomycin. Culture-positive exogenous endophthalmitis cases were classified by precipitating procedure (post-cataract surgery, post-intravitreal injection, other). Data included demographics, risk factors, microbiological spectrum, in-vitro antimicrobial susceptibilities, and treatments (intravitreal antibiotics alone or pars plana vitrectomy plus intravitreal antibiotics). Primary comparison was Gram-class distribution between post-cataract and post-injection cases, with secondary outcomes including organism profiles, susceptibility to first-line agents, and best-corrected visual acuity at three months, benchmarked against international reports.

Microorganisms spectrum per procedure



Results

Total incidence of Endophthalmitis over 10 years period post Cataract surgery and post intravitreal injections was 0.04% (16/38,717 cases) and 0.016% (16/100,819 cases), respectively. Of 36 culture-positive cases, 80.5% were Gram-positive, 14% Gram-negative, and 5.5% of fungal origin. **Staphylococcus epidermidis** predominated, followed by **viridans streptococci**. All Gram-positive isolates were vancomycin-sensitive; gentamicin was universally effective against Gram-negative organisms, though ceftazidime susceptibility was not routinely tested despite empirical use at our hospital. Cataract-associated Gram-negative isolates included *P.aeruginosa* (n=2), *Proteus mirabilis* (n=1), and *Morganella morganii* (n=1). Notably, The Gram-negative proportion was **higher** after cataract surgery than after intravitreal injections: 5/16 (31.5.0%) vs 1/16 (6.3%), respectively. Five patients underwent early vitrectomy with intravitreal antibiotics, while 29/36 received intravitreal antibiotics alone. At 3 months, Median VA was 0.70 logMAR, 30.5% achieved vision ≥6/12, and five cases required further surgery.



Conclusions

Exogenous endophthalmitis in our cohort was predominantly Gram-positive, with *S. epidermidis* as the leading isolate. However, in a setting with intracameral vancomycin prophylaxis for cataract surgery, we observed a higher Gram-negative share among post-cataract endophthalmitis compared with intravitreal injection cases, and higher than typically reported in UK series. While numbers are small and causality cannot be inferred, the signal supports ensuring robust Gram-negative coverage in empiric intravitreal therapy for post-cataract endophthalmitis and underscores the need for routine ceftazidime susceptibility reporting. Larger prospective surveillance with standardized Antimicrobial Susceptibility Testing and sample sizes is warranted.