

Safety and efficacy of daptomycin usage for Outpatient Parenteral Antimicrobial therapy (OPAT) patients in a level 4 Irish Hospital over 1 year.



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An Academic Partner of Trinity College Dublin

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Background

Daptomycin, a cyclic lipopeptide antibiotic, is commonly used in OPAT for gram-positive bacterial infections like MRSA and VRE.

While generally well tolerated, clinicians must watch for potential adverse effects such as elevated creatinine kinase (CK), rhabdomyolysis, and eosinophilic pneumonitis.

Guidelines define a raised creatinine kinase as 5 times the upper limits of normal (ULN) with myalgia symptoms or asymptomatic + 10 times the ULN (1).

Phase 3 clinical trials reported an incidence of 2.8% of raised CK, with subsequent European studies reporting slightly higher rates at 3 -4% (2).

Irish HPRA guidelines recommend CK monitoring at baseline and weekly thereafter and this is the standard against which this study is measured (1).

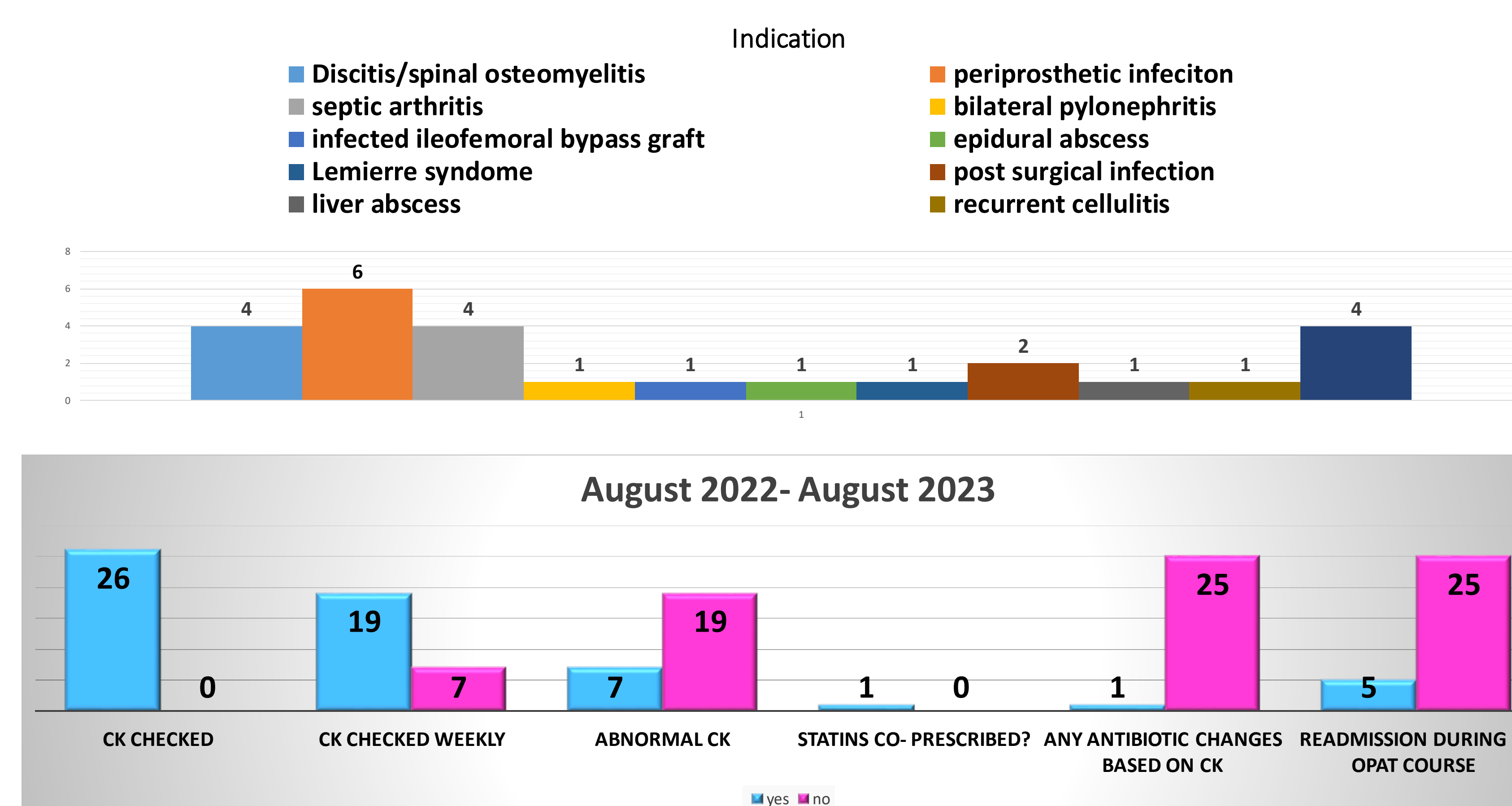
The concurrent use of HMG-CoA reductase inhibitors with daptomycin can potentially increase the incidence of myopathy and rhabdomyolysis (3).

Methodology

This retrospective audit, approved by the local quality improvement office, accessed data from the OPAT clinical database from August 2022 to August 2023. Re-audit period from September 2023 to April 2024 after implementing changes.

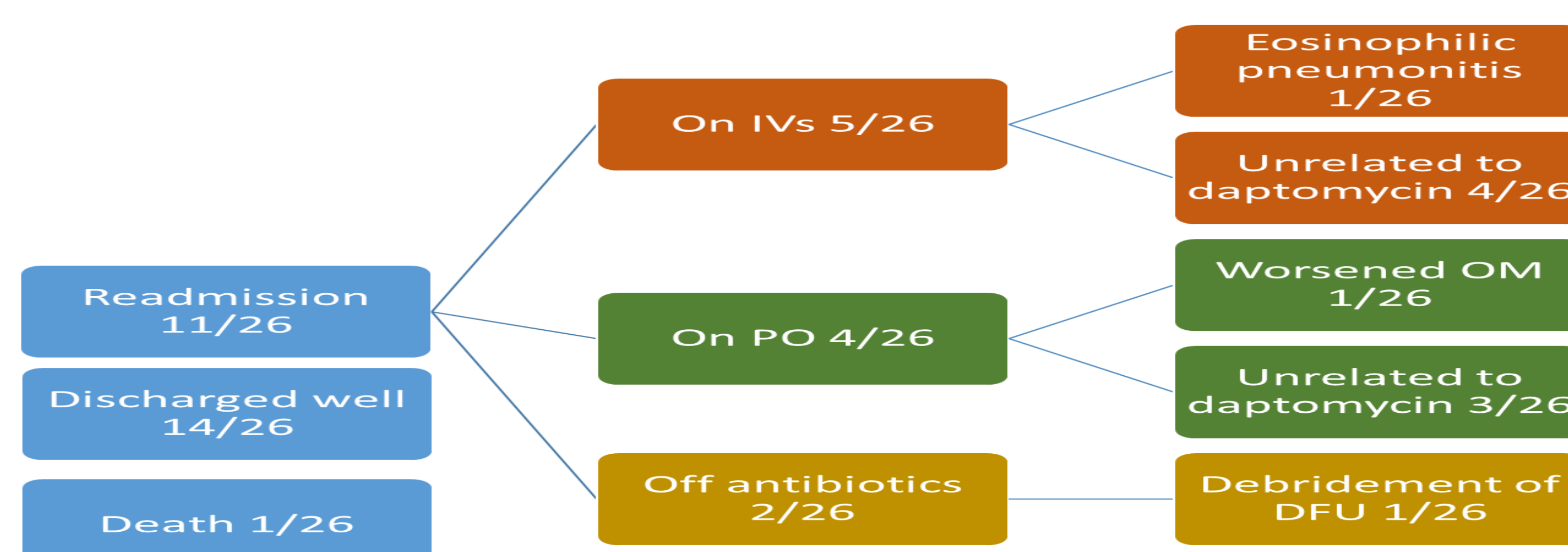
Results

93 OPAT-discharged patients, 26 (28%) received daptomycin, with a median age of 66.5 and mode of 71. 11 identified as male and 15 female.



- 27% (n=7) were noted to have raised CK while on daptomycin, only 1 or 3.9% of which was greater than 5 times the ULN and required an antibiotic switch of therapy.
- 1 patient whose statin was erroneously continued while on daptomycin did not have a raised CK during their antibiotic course.
- Of those re-admitted only one was related to daptomycin.

Outcomes at 6 months post discharge

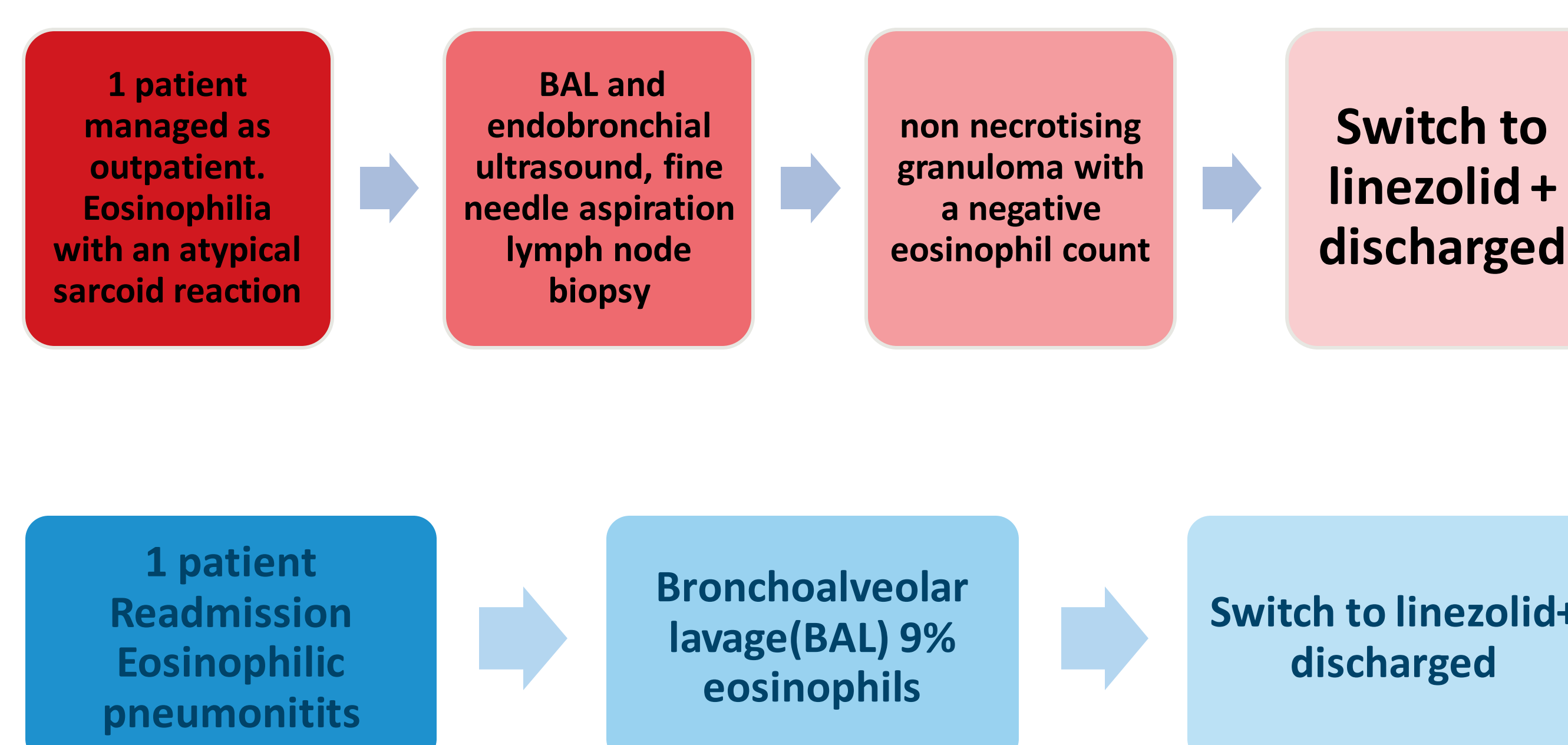


Admissions unrelated to daptomycin included due to stroke, TIA, gastroenteritis, elective surgery and symptomatic anaemia.

References:

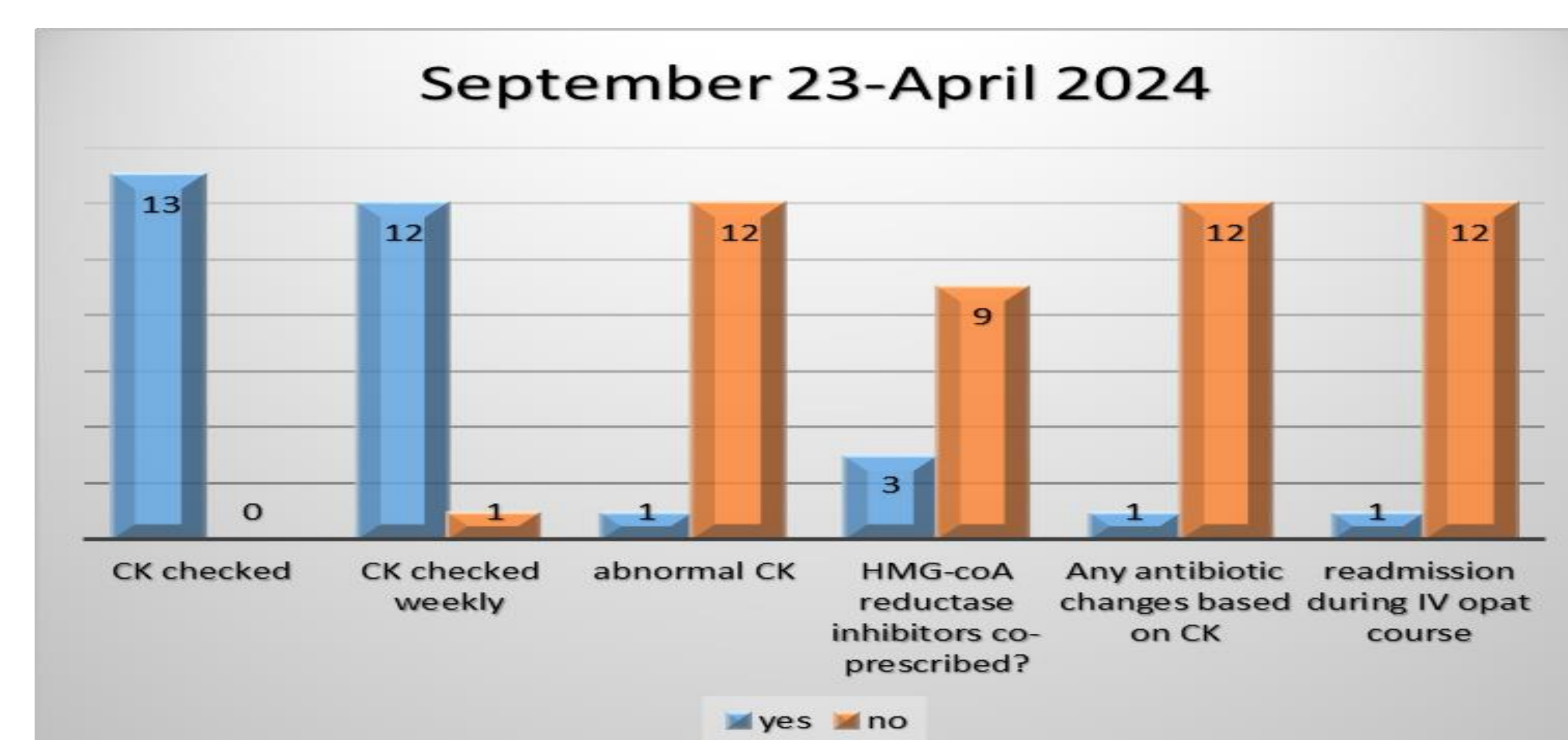
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Daptomycin complications



Re-audit

- Blood packs with forms requesting CK weekly checks were given to patients on discharge.
- Visual reminders were placed beside patient's names in the OPAT clinic to ensure that CK levels were checked.



Conclusion

- All patients had baseline CK monitoring.
- Rates of 3.9% of adverse effects of daptomycin in terms of raised CK were in line with those reported in the literature.
- Two patients had serious complications related to daptomycin, due to the close monitoring early intervention was initiated with successful outcomes.
- Low mortality + re-admission rates within 6 months of treatment provide further evidence for the safety of daptomycin usage in the community.