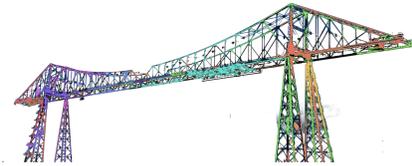


Evaluation of a complex oral antibiotic clinic at South Tees Hospitals NHS Foundation Trust

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Background

In the light of increasing evidence that treating complex infections with oral antibiotic therapy is non-inferior to prolonged intravenous therapy, there has been a shift in practice towards early switching to oral treatment. However, this treatment still requires careful monitoring for treatment toxicity and efficacy and limited data exists evaluating current dedicated outpatient oral antibiotic services. The complex oral outpatient antimicrobial therapy (COPAT) service at James Cook University NHS Foundation Trust was set up in January 2020 and provides clinic-based follow-up for patients receiving oral antimicrobials for complex infections requiring prolonged therapy. The COPAT clinic is led by a prescribing pharmacist with Infectious Diseases consultant support.

Objective

To describe the range of infections treated by the COPAT service at a large tertiary NHS hospital and evaluate clinical outcomes.

Method

We performed a retrospective analysis of all patients treated by the COPAT service, and collated data on demographics, diagnoses, culture results, antimicrobial usage, adverse effects, and outcomes using electronic and written patient records. Outcomes were assessed according to the BSAC OPAT National Outcome Registry definitions:

- Success: "Completed therapy in OPAT with no change in antimicrobial agent, no adverse events, cure or improvement of infection and no readmission".
- Partial success: "Completed therapy in OPAT with either change in antimicrobial agent or adverse event not requiring admission".
- Failure: "Readmitted due to infection worsening or due to adverse event. Death due to any cause during OPAT".
- Indeterminate: "Readmission due to unrelated event e.g. chest pain".

We collected written feedback by distributing a service evaluation survey to patients during outpatient appointments.

Results

During a 32-month period from January 2020 to August 2022, 138 infection episodes were treated by the COPAT service, of which 114 had completed to discharge with full data available as of September 2022 and were analysed further. These episodes comprised 108 unique patients, with a median age of 63. 34/108 (30%) were female.

The median (IQR) [range] length of treatment in COPAT was 38 (28-59.5) [9-365] days. Bone and joint infections predominated with prosthetic and native joint infections, osteomyelitis and discitis together comprising 61% of the total (Figure 1).

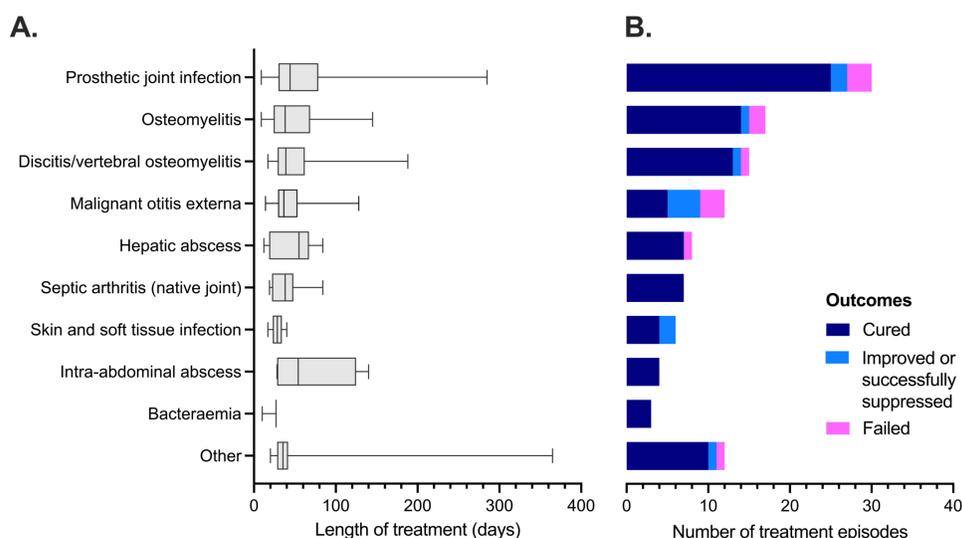


Figure 1: Primary infection diagnoses. (A) Length of treatment in days: box and whisker plots of median, interquartile range and range. (B) Number of treatment episodes, coloured by outcome.

70/114 (61%) courses were with single agents, 34/114 (30%) were dual courses and the remaining 10/114 (9%) episodes were treated with three or more concurrent antimicrobials. The most common additional agents were rifampicin and doxycycline.

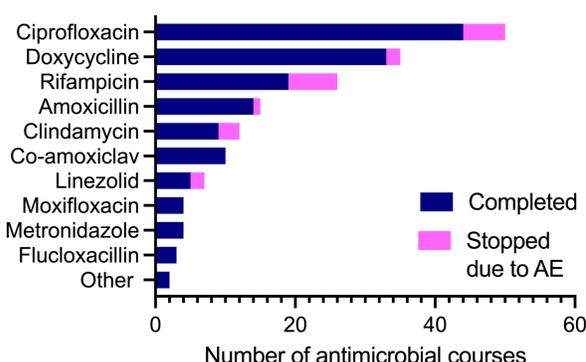


Figure 2: Number of antimicrobial courses, including number stopped due to adverse events (AE)

Overall, ciprofloxacin was the single most used antimicrobial. The highest rates of adverse effects requiring therapy switching or cessation were found with linezolid (29%), rifampicin (27%) and clindamycin (25%), with nausea being the most reported adverse effect.

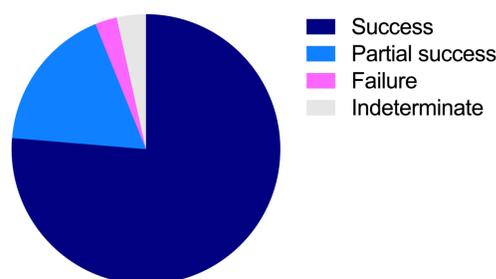


Figure 3: Overall outcomes of n = 114 COPAT treatment episodes.

Outcomes at discharge were excellent with 76% classified as success, 18% as partial success (predominantly due to a change in antimicrobial treatment due to adverse effects reported), 4% indeterminate and 3% failure.

Patient satisfaction was also very high: out of the ten responses received, all rated the service as 'Excellent', and all indicated they would recommend the service to family and friends.

Discussion

The COPAT clinic provides a valuable structured service for the follow-up of patients prescribed oral antimicrobials after discharge from inpatient or OPAT services for a wide range of infections. These results are in line with previous research showing the non-inferiority of oral antibiotics for prolonged bone and joint infection courses (2).

There were high rates of overall success, with successful/partially successful outcomes being the outcome for over 95% of all cases treated.

The COPAT service was well received by patients, demonstrated by the excellent responses from patient feedback. The service will continue to provide care to patients with complex infections in the future.

References

1. The British Society for Antimicrobial Chemotherapy Outpatient Parenteral Antimicrobial Therapy National Outcomes Registry System (NORS) User Guide. Retrieved 11th October 2022, from <https://e-opat.com/nors-download-documents/>
2. Oral versus Intravenous Antibiotics for Bone and Joint Infection (Ho-Kwong Li et al), accessed on 11th October 2022 at <https://pubmed.ncbi.nlm.nih.gov/30699315/>