Outpatient Parenteral Antibiotic Therapy (OPAT) for Non-Orthopaedic Surgical Infections

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INTRODUCTION

Calderdale and Huddersfield NHS Foundation Trust (CHFT) serves a population of 470,000 residents. The OPAT service is provided by two community teams and overseen by microbiology with referring clinical teams reviewing patients as required. There is no infectious diseases service, which is an unusual OPAT model. Traditionally the OPAT service has provided treatment for infections under medicine and orthopaedics but OPAT have been actively encouraging referrals from the non-orthopaedic surgical team over the last couple of years. A look-back exercise was undertaken to identify patients utilising this service for non-orthopaedic surgical infections, their clinical indications, outcomes, any adverse effects and in-patient bed-days saved.

METHODS

A retrospective review of electronic patient records for patients treated by the OPAT service for the period April 2017- March 2018 was carried out (CHFT is a paperless trust with clinical records held electronically). The following data was collected for all OPAT patients using a standardised proforma: patient demographics, indication for antibiotics, duration of antibiotics, any admissions avoided and number of bed-days saved. Patients identified as being treated for non-orthopaedic surgical infections also had data collected regarding antibiotic choice, venous access device, whether treatment was targeted or empirical, and whether antibiotic choice was discussed with the clinical microbiologists. Patients were followed up for a minimum of 6 months. Clinical outcome was evaluated with patients being categorised as 'cured', 'improved' or 'failed'. Complications and incidents related to OPAT therapy were recorded. Patient anonymous feedback collected at the time of discharge was also reviewed. The results were presented to the surgical team and feedback requested from users.

RESULTS

549 patients received antibiotics via the OPAT service between April 2017- March 2018. Of these, 285 admissions were avoided with 4596 inpatient bed days saved.

Indications for OPATs

INDICATION	TOTAL
Cellulitis	341
Bronchiectasis	46
Deep-seated infections	41
Bone & joint infections	69
Diabetic foot infections	16
UTIs	11
Endocarditis	4
Meningitis	1
Other	20

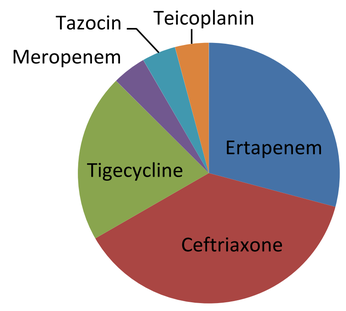
For the non-orthopaedic surgical infection subset, 24 patients received antibiotics via the OPAT service between April 2017- March 2018. 579 inpatient bed-days were saved.

Surgical Patient Subset (n=24)

INDICATION	NUMBER
Intra-abdominal abscess	3
Hernia mesh infection	2
Liver abscess	2
Gall bladder empyema	1
Post op wound infections	2
Diabetic foot infections	6
Pelvic abscess	3
Infected breast implant	1
Infected renal cyst	1
Infected vascular graft	1
Mycotic aneurysm	1
Malignant otitis externa	1

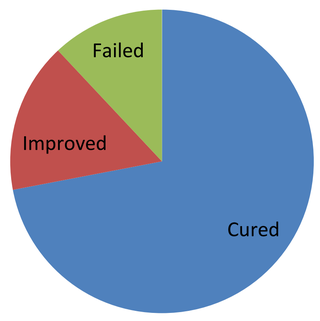
17 patients had a peripherally inserted central catheter (PICC) line whilst 7 used peripheral venous cannulae

Number of patients treated with each antibiotic via OPAT



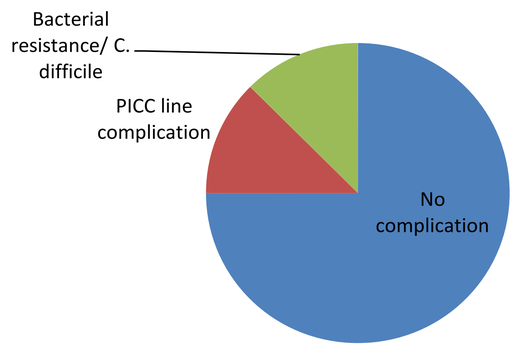
Seven patients received ertapenem, nine ceftriaxone, five tigecycline, one meropenem, one tazocin and one teicoplanin. Seven patients received targeted antibiotics, seventeen were treated empirically. All were discussed with microbiology.

Outcome of OPAT Therapy



17 patients were deemed to be cured, four improved and three met criteria for failure as defined by the British Society for Antimicrobial Chemotherapy (BSAC) National OPAT Outcomes Registry (NORS). Of the four patients who were categorised as improved, one was readmitted for definitive drainage and mesh removal, one was admitted with new collections, one was discharged on oral antibiotics and one was readmitted with fluctuant breast swelling thought to be due to implant infection. The failed patients had relapsed diabetic foot infection, pelvic actinomycosis with ongoing symptoms and tubo-ovarian abscess which was initially managed as a wound infection with inadequate course length.

Complications of OPAT therapy



All patients completed the full course of antibiotics. Three patients developed complications with their intra-vascular access device, namely; possible PICC line infection, leaking PICC line and PICC line fracture. Three patients had microbiological complications: one developed Clostridium difficile associated diarrhoea and two became colonised with beta-lactamase producing bacteria (extended-spectrum Beta-lactamase (ESBL) and Amp-C Beta-lactamase).
There were two further datix incidents related to OPAT during this period. Both were due to inadequate communication between the clinical teams and the relevant OPAT team but resulted in no harm to the patient.

DISCUSSION

Historically in CHFT the OPAT service has been utilised for mainly medical patients, in particular cellulitis. The service has been broadened to include surgical indications and promoted to the surgical teams with reasonable take-up. Survey feedback from both patients and the surgeons demonstrate this has been well-received. There have been few adverse effects but 3 out of 24 patients failed therapy. This could be explained by the high rates of empirical therapy and inadequacy of source control.

More comfortable and safe in my own environment

I had more choice and involvement in my care

Able to heal psychologically much better at home

The OPAT model is unusual in CHFT as there is no infectious diseases department to clinically review patients. Instead the referring consultant takes clinical responsibility and the OPAT microbiologist acts as an intermediary, flagging up the need for clinical review to the referring consultant. This model has been successful in the views of the authors and this is supported by patient and user feedback.

References: http://opatregistry.com/

compassionate care