A multi-centre evaluation of anti-microbial usage based on national data from 2017-2021 for patients diagnosed with bacteraemia enrolled on OPAT in Ireland

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Background:

Outpatient anti-microbial parenteral therapy (OPAT) is a safe cost-effective treatment option for patients requiring extended courses of intravenous anti-microbials. It enables treatment at home where patients are well enough not to require inpatient hospital care. OPAT is a multi-disciplinary service with an Infectious Diseases Physician at the helm in terms of anti-microbial management and stewardship.

Methods:

All patients enrolled on the OPAT service are registered on a national database. Patient demographics are included on the database which include a unique patient identifier number, age, diagnosis, anti-microbial agent, frequency of doses, duration of anti-microbial therapy and length of inpatient stay. For this evaluation, the national database was interrogated based on hospital site and anti-microbial agent for patients being treated for bacteraemia. Data was rendered anonymous and analysed using Microsoft Excel software. Patients included were enrolled on an OPAT programme and met the inclusion criteria defined by the National OPAT guidelines. Those who had a blood stream infection or bacteraemia caused by a particular pathogen were identified. The number of patients on OPAT with bacteraemia were compared across 25 Irish Hospital sites and the anti-microbial usage

Results:

Data was obtained for 745 patients from 25 different Irish hospital sites with an established OPAT service. Patients listed as having confirmed a bacteraemia on the national OPAT database from 2017-2021 were included in the analysis. 621 OPAT prescriptions were obtained from eight hospital sites (83.35%) where it was most utilised with Beaumont Hospital (101/745, 13.5%), St Vincent's University Hospital (93/745, 12.5%) and Cork University Hospital (89/745, 11.9%) accounting for the highest uptake per site. There were 24 unique anti-microbial preparations utilised nationally and on average there were 5.36 different anti-microbials used per site. Flucloxacillin via continuous infusion(211/745, 28.3%) , Ceftriaxone (191/745, 25.6%) and Daptomycin were the most commonly used anti-microbials across all hospital sites. The vast majority of anti-microbials used were for once daily dosing (577/745, 77.4%). For anti-microbials requiring multiple daily dosing, 68.4% (115/168) were administered with the assistance of a specialised healthcare provider (H-OPAT)

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Conclusions:

There is a geographical disparity in the numbers of patients with bacteraemia being treated on OPAT from the years 2017 to 2021. Anti-microbials which require once daily dosing are the most predominantly used regimens for patients on OPAT. Larger centres with a formal OPAT service used a wider range of anti-microbials.

Antibiotic	number of prescriptions
Aciclovir	1
Amikacin	10
Amoxicillin	4
Ambisome	5
Anidulafungin	2
Aztreonam	2
Caspofungin	6
Cefazolin	59
Cefotaxime	1
Ceftazidime	7
Ceftriaxone	191
Cefuroxime	4
Coamoxiclav	1
Daptomycin	117
Ertapenem	55
Flucloxacillin	25
Flucloxacillin infusion	211
Gentamicin	1
Meropenem	18
Piperacillin Tazobactam	16
Piperacillin Tazobactam infusion	10
Teicoplanin	5
Tigecycline	4
Vancomycin	7