A REVIEW OF ANTIMICROBIAL PRESCRIBING IN CARE HOMES WITH NURSING
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BACKGROUND
Older people living in institutions often have atypical presentations of infections including lack of fever, behavioural changes, or confusion which can cause diagnostic difficulties resulting in an unnecessarily high use of antimicrobials. Studies have indicated that a significant proportion of antimicrobial use is unwarranted and that nursing homes patients are frequently prescribed antimicrobials without being examined by medical staff.

Unwarranted antibiotic usage contributes to resistance problems, unnecessary side effects and costs therefore it is important to monitor antimicrobial usage in care homes.

The audit provides a baseline measurement, insight into factors that influence antimicrobial prescribing is crucial when developing strategies aimed at rational use of antibiotics.

OBJECTIVES

• To review the use of antimicrobials in residents over a 6 week period against audit standards.

• To interview care home nurses and GPs to identify their attitudes towards the use of antimicrobials and to identify factors that influence antimicrobial prescribing in this setting.

Audit standards

1. Indication is recorded in resident notes. (100%)
2. Choice of antimicrobial is according to CCG guidelines or hospital recommendations. (≥90%)
3. The prescribing of broad spectrum* antimicrobials is in accordance to the guidelines, lab sensitivity or hospital recommendations. (≥80%)
4. Prescribing takes into account allergy status. (100%)
5. Correct length of course is prescribed. (100%)
6. Antimicrobials are started on the day they were prescribed (except delayed prescriptions). (100%)
7. All doses of antimicrobials are given as prescribed. (100%)
8. There is minimal prescribing of broad spectrum antimicrobials with proton pump inhibitors. (≤30%)

*Broad spectrum antimicrobials include cephalosporins, quinolones and co-amoxiclav

RESULTS

• Out of a total of 179 residents, 59 (33%) were prescribed at least one antimicrobial. There were similar numbers of males and females (29 versus 30) and the mean age was 82.

• Of the 59 residents identified, there was sufficient information to evaluate the treatment decision for 57.

• A total of 75 antimicrobial courses were prescribed.

• 99% of courses followed a face to face consultation with examination of the resident.

• 73% of antimicrobials were prescribed by the care home GPs and the remainder by out-of-hours services, hospital prescribers or unknown.

Table showing compliance with audit standards

<table>
<thead>
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<th>Standard</th>
<th>Target /%</th>
<th>Result / numbers</th>
<th>Result /%</th>
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<tbody>
<tr>
<td>1</td>
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</tr>
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• 45% of prescriptions were for penicillins, 13% macrolides, 12% each for trimethoprims and chloramphenicol.

• 23% of courses were for broad spectrum antimicrobials.

Graph showing number of cases per infection type

IMPLICATIONS FOR PRACTICE AND NEXT STEPS

• The findings will be presented and discussed with the care home GPs at an educational session in November 2015, where the CCG guidelines will also be promoted.

• A report will be sent to the CCG for discussion.

• Crucial to the promotion of prudent antimicrobial use is the education of care home staff. A general antimicrobial information leaflet and a decision aid for the diagnosis of and management of UTI in residents is being developed for their use.

METHOD

In October 2015, residents prescribed antimicrobials in the preceding six weeks in four care homes in Southwark were identified by reviewing their medicine administration record (MAR) charts. Compliance of antimicrobial prescribing and use was measured against audit standards using care home and GP records.

Four care home nurses and two GPs were interviewed using a structured questionnaire.

DISCUSSION

• The choice of antimicrobial was in line with CCG guidelines or hospital recommendations in 67% of cases, this is lower than other audits which address compliance with antibiotic guidelines in the nursing home setting. Deviation from the guidance was mainly due to the choice of antibiotic used for the treatment of LRTIs: co-amoxiclav, cefalexin and erythromycin were used where amoxicillin was indicated.

• Additionally, there were several indications that were not covered by the guidelines e.g. eye infections.

• For documented penicillin allergy, erythromycin was used instead of clarithromycin.

• In a number of cases broad spectrum antimicrobials were prescribed for non-specific clinical presentations attributed to infection without any supporting evidence.

• Choice of antimicrobial was most often appropriate for UTIs. However UTIs were often diagnosed when the presenting symptoms were inconclusive. Behavioural changes were often the only symptom noted and this was the most common reason given by the nurses interviewed for performing a dipstick test. Diagnosis of infection is challenging in this population because of dementia and the presentation of atypical symptoms. The prevalence of asymptomatic bacteriuria is high in this patient group with a high likelihood of obtaining a positive dipstick test, potentially leading to inappropriate treatment.

• Other studies have highlighted that potential antimicrobial misuse specific to this setting included the prophylactic use for UTIs. There is a lack of long-term evidence of effectiveness of this strategy. Two residents had long-term antimicrobials for UTI prophylaxis. In one case, prescribing had been for longer than one year and there was no documentation to indicate that this had been review.

• The interviews with the GPs revealed that their perceived risk of non – treatment related to adverse outcomes strongly influenced their decision to prescribe an antimicrobial.

• The use of diagnostic resources was minimal. Off-site tests were often impractical due to the frailty of the residents and it was also difficult to obtain good samples -particular urine. The lack of near patient tests was also cited.

• Whilst both GPs were aware that the CCG had guidelines they indicated that they did not always refer to them and cited the use of national guidance or ‘prescribing habit’ the main influence on prescribing pattern. The lack of care home specific guidelines or policies was also mentioned.

• Infection control was identified as a key component of antimicrobial stewardship in this setting. In one of the homes several residents were being treated for conjunctivitis at the same time. The GP highlighted the need for effective eye hygiene but there was no evidence that this was acted upon by the care home.

Types of infections per number of cases