

Audit of the use of antibiotics used to treat respiratory tract infections in a DGH Emergency Department

K Kittappa*, Specialty Doctor

A Waseem*, Clinical Fellow

P Muthu*, Consultant

C E Phillips⁺, Consultant

Emergency Department, Darlington Memorial Hospital*

Emergency Department, University Hospital of North Durham⁺

drkkarthik@gmail.com

The Emergency Department (ED) at Darlington Memorial Hospital has approximately 60,000 attendances per year. Many of these attendances are related to infections requiring the administration of antibiotics.

The main purpose of this audit was to see if staff in the ED were adhering to the Trust Antibiotic Policy^{1,4} for treatment of respiratory tract infections.

Methodology

- A hand search of the ED records for patients presenting in October 2012 was performed, to identify 50 consecutive records for patients attending with a respiratory tract infection. These included community acquired pneumonia (CAP), aspiration pneumonia, URTI and exacerbations of asthma or COPD.
- Information was gathered on the final clinical diagnosis, antibiotic prescription and CURB-65 score (a clinical prediction score that has been validated for predicting mortality in community-acquired pneumonia).
- The prescription of antibiotics was compared to the standard, which was defined as the treatment advised in the Trust Antibiotic Policy

Results

- 24 patients were male and 26 female.
- The age range was from 20 to 101 years: mean age 63 and median 72.
- The breakdown of diagnoses is listed in Table 1.

- 27 patients (54%) were admitted to Medical Assessment Unit (MAU) and 23 (46%) discharged home.
- In 24 (48%) patients, the Trust policy was adhered to. The reasons for non-adherence are listed in Table 2.
- Only five (15%) out of 34 patients presenting with CAP had a CURB-65 score documented: it is necessary to know the CURB-65 score in order to make appropriate decisions regarding the need for admission and which antibiotics to administer.
- Antibiotics given for CAP in 15 patients were not in accordance with Trust policy.

Table 1. Breakdown of diagnoses

Diagnosis	Number of patients
CAP	34
Pleurisy	1
URTI	2
Infective exacerbation of asthma/COPD	9
Aspiration pneumonia	4

Table 2. *Reasons for non-compliance with Antibiotic Policy*

Antibiotics given but not indicated	
Diagnosis	Comments
URTI (2)	Patients with URTI ³ do not normally require antibiotics
Pleurisy (1)	Patients with pleurisy do not normally require antibiotics
Incorrect antibiotics given	
Diagnosis	Comments
Aspiration Pneumonia (1)	Patient prescribed amoxicillin and clarithromycin instead of amoxicillin & metronidazole
CAP (1)	No formal diagnosis documented, though patient had SOB and crepitations. Admitted to MAU having been prescribed amoxicillin
CAP (1)	Patient given doxycycline despite having no documented allergy to penicillin
CAP (7)	Seven patients who were discharged from the ED were prescribed co-amoxiclav, instead of amoxicillin
CAP (6)	Six patients who were admitted received only co-amoxiclav, when should also have also received clarithromycin
Infective exacerbation of asthma/ COPD (5)	Patients were given co-amoxiclav and clarithromycin instead of amoxicillin (or doxycycline).
Antibiotics not given when indicated	
Diagnosis	Comments
Infective exacerbation of COPD (2)	Patients were admitted to MAU without being prescribed antibiotics

Conclusions

- The limitations of this small audit are recognised, but the findings demonstrate that at the time these data were collected, ED medical staff did not prescribe in accordance with the Trust Antibiotic Policy in about half the cases presenting with respiratory tract infections. This occurred despite the Policy being immediately available and easily accessible via the Trust Intranet.
- In order to determine correctly which patients need to be admitted for treatment of CAP (and consequently which antibiotics need to be administered), the CURB-65 score needs to be known: it was not documented in 28 of 34 patients presenting with CAP.
- The first dose of antibiotics for two patients being admitted to the MAU with an infective exacerbation of COPD was not administered in the ED. This may have been associated with delays for admission.

Recommendations

- Staff need to be reminded of the importance of adhering to the Trust Antibiotic Policy². Departmental and Trust induction programmes should highlight this to medical staff.
- Patients can remain in the ED for prolonged periods awaiting a ward bed and therefore require the first dose of antibiotics to be given in the ED.
- We suggest that departmental practice be re-audited in six months although it is recognised that new junior medical staff will be in post by that time making direct comparisons difficult.

References

1. D M Wong, D A Blumberg, L G Lowe. Guidelines for the Use of Antibiotics in Acute Upper Respiratory Tract Infection. *Am Fam Physician*. 2006 Sep 15;74(6):956-966.
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