PREVALENCE AND ASSOCIATIONS OF REGISTRARS’ PRESCRIPTION OF ANTIBIOTICS IN RESPIRATORY INFECTIONS

Parker Magin
Simon Morgan
Kim Henderson
Amanda Tapley
Mieke van Driel
Rationale of the study

The current *Therapeutic Guidelines Antibiotic*

- recommend symptomatic (non-antibiotic) treatment for acute uncomplicated rhinosinusitis
- advise that acute bronchitis is most often viral and usually does not require antibiotic therapy
• Initial use of antibiotics is not of benefit in acute upper respiratory tract infections
  • and is associated with an increase in adverse effects.

• Prescription of antibiotics in acute bronchitis is associated with limited benefits of doubtful clinical significance

• Ecological sequelae – at individual as well as community level
Although recognized as a magic drug, penicillin remained a scientist's dream until World War II. Then, with frantic haste, it was developed into the most powerful weapon ever used in the fight against disease.
Thanks to PENICILLIN
...He Will Come Home!
Aims

- To establish levels and associations of GP registrars’ antibiotic prescribing in upper respiratory tract infections
  - ICPC-2 R74

- To establish levels and associations of GP registrars’ antibiotic prescribing in bronchitis and bronchiolitis
  - ICPC-2 R78
Methods

• Registrar Clinical Encounters in Training (ReCEnT) study.
  • Ongoing cohort study
  • once per term
  • demographic, clinical and educational details of 60 consecutive consultations.
  • International Classification of Primary Care-2 (ICPC-2).

• three RTPs

• four data collection rounds, 2010-2011
Methods

• Outcome factors
  • Antibiotic prescribing in R74 and R78 diagnoses

• Independent variables
  • Patient factors
  • Registrar factors
  • Practice factors
  • Consultation factors

Univariate analyses presented today
Results

- 207 registrars (response rate 95%)
- 383 registrar-rounds
  - 41% in Term 1
  - 34% in Term 2
  - 24% in Terms 3/4
- 22,844 consultations.
Results

• URTI diagnosed in 7.3% of consultations

• bronchitis/bronchiolitis diagnosed in 2.2% of consultations.
Results

Antibiotics prescribed in:

- 26.0% (95% CIs 23.8-28.1) of URTIs
- 77.5% (73.9-81.1) of bronchitis/bronchiolitis.
  - of these, 6.8% received two antibiotics
<table>
<thead>
<tr>
<th>Antibiotic</th>
<th>URTIs</th>
<th>Bronchitis</th>
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</thead>
<tbody>
<tr>
<td>amoxicillin</td>
<td>54.4</td>
<td>44.9</td>
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<tr>
<td>roxithromycin</td>
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<td>penicillin</td>
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<td>cephalexin</td>
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<td>4.6</td>
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<td>erythromycin</td>
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<td>1.4</td>
<td>2.5</td>
</tr>
<tr>
<td>doxycycline</td>
<td>0.9</td>
<td>4.3</td>
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</tbody>
</table>
Results

Significant associations of an antibiotic prescribing in URTIs:

• patient factors
  • older patients, English-speaking background, privately billed.

• registrar factors
  • male registrars, earlier in training, overseas-trained

• practice factors
  • private-billing

• consultation factors
  • longer consultations
Results

Significant associations of an antibiotic prescribing in bronchitis/bronchiolitis:

• patient factors
  • older patients, being new to the registrar, privately billed.

• practice factors
  • private-billing
Conclusions

• While non-adherence to evidence-based guidelines may be warranted in individual clinical scenarios, this study suggests, overall, high levels of inappropriate antibiotic prescribing
Approaches to registrar training will be informed by a more detailed analysis of associations and predictors of antibiotic prescribing.