Chest X-Ray Requests in Primary Care for Suspected Community Acquired Pneumonia

Are Chest X-Rays ordered unnecessarily in Primary Care?

Introduction
There currently too high a frequency of CXR's performed that have no valid indication in primary care, and inflammatory changes are only occasionally found in these patients.

The Glenroyd Medical Practice in Blackpool provides us with valuable data on a variety of cases where CXR's are performed at the neighbouring Walk-in Centre for outpatient CXR's.

Objective & Methods
A retrospective audit was undertaken in October 2016 to compare our CXR requests for suspected CAP with joint national guidance produced in 2009. The audit aimed to standardise CXR requests and improve compliance with BTS guidelines.

Data from 30 patients was randomly selected from a pool of 146 patients seen in a 2 month period who had undergone CXR's for suspected CAP.

Indications for CXR in primary care:
• Doubtful diagnosis
• Risk of underlying pathology
• No progress after 48 hours of antibiotic therapy.

Initial Results
• 1st Audit Round
  • No valid indication for CXR in 27% of sample
  • Inflammatory changes only found in 7% of sample

Repeat Results
• 2nd Audit Round
  • No valid indication for CXR in 13% of sample
  • Inflammatory changes found in 16% of sample

Data Distribution

<table>
<thead>
<tr>
<th></th>
<th>1ST AUDIT</th>
<th>2ND AUDIT</th>
</tr>
</thead>
<tbody>
<tr>
<td>No indication</td>
<td>73%</td>
<td>87%</td>
</tr>
<tr>
<td>Indication</td>
<td>27%</td>
<td>13%</td>
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Intervention
The results of the 1st cycle of this audit were presented in a departmental audit meeting which consisted of consultants, registrars, nurse practitioners and practice managers. Staff education is key to improving these results. A written guideline was developed as there was a clear demand for it by practice staff to improve compliance with CXR requests.

Discussion
Time taken to perform chest X-ray from date of request (2 weeks in some cases), may contribute to underestimation of cases in which potential consolidation resolved before CXR is taken. Possible exclusion of other co-morbidities that are related to increased risk of CAP in the community.

References
British Thoracic Society: Guidelines for the Management of Community Acquired Pneumonia in Adults 2009
Pubmed - Risk factors for community-acquired pneumonia in adults in Europe

Written Guidelines
Sample of newly written practice guideline for management of cough in Primary Care located in each consultation room for staff.