BEST EVIDENCE TOPIC REPORTS

Towards evidence based emergency medicine: best BETs from the Manchester Royal Infirmary

Edited by K Mackway-Jones

Best evidence topic reports (BETs) summarise the evidence pertaining to particular clinical questions. They are not systematic reviews, but rather contain the best (highest level) evidence that can be practically obtained by busy practising clinicians. The search strategies used to find the best evidence are reported in detail in order to allow clinicians to update searches whenever necessary.

The BETs published below were first reported at the Critical Appraisal Journal Club at the Manchester Royal Infirmary. Each BET has been constructed in the four stages that have been described elsewhere.

The topics covered in this issue of the journal are:

- Needle aspiration or chest drain for spontaneous pneumothorax
- Oral or intravenous steroids in acute severe asthma
- The role of therapeutic needle aspiration in radial head fractures
- The role of diagnostic needle aspiration in olecranon bursitis


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Needle aspiration or chest drain for spontaneous pneumothorax

Report by Ashes Mukerjee, Research Fellow

Search checked by Kevin Mackway-Jones, Consultant

Clinical scenario

A 25 year old patient with no history of respiratory disease attends the emergency department with acute onset of shortness of breath. A chest radiograph reveals a left sided pneumothorax of approximately 50% the volume of the left lung; there is no tension. You wonder whether needle aspiration or chest drain insertion is the treatment of choice.

Three part question

In [a young patient with a spontaneous pneumothorax without tension] is [needle aspiration or chest drainage] better at [reinflating the lung, reducing hospital stay and preventing recurrence]?

Search strategy

Medline 1966 to 3/99 using the OVID interface. (exp pneumothorax OR pneumotho$) AND (exp aspiration OR aspira$tion.mp OR thoracocentesis.mp) AND (exp chest tubes OR drainage OR exp thoracostomy OR chest drain$.mp) LIMIT to human and English language.

Table 1

<table>
<thead>
<tr>
<th>Author, date, and country</th>
<th>Patient group</th>
<th>Study type (level of evidence)</th>
<th>Outcomes</th>
<th>Key results</th>
<th>Study weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Harvey and Prescott, 1995, UK</td>
<td>73 patients with spontaneous pneumothorax</td>
<td>PRCT</td>
<td>Success rate</td>
<td>80% v 100%</td>
<td>Small numbers</td>
</tr>
<tr>
<td></td>
<td>Needle aspiration (35) v intercostal drain (38)</td>
<td></td>
<td>Pain score during procedure</td>
<td>No significant difference</td>
<td>Large differences in groups at baseline in terms of pneumothorax (34% v 58% complete collapse)</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Hospital stay</td>
<td>3.2 v 5.3 days (p=0.005)</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Recurrence rate</td>
<td>No significant difference</td>
<td></td>
</tr>
<tr>
<td>Andrievs et al, 1995, France</td>
<td>61 patients with first or second episode of spontaneous pneumothorax</td>
<td>RCT</td>
<td>Success rate</td>
<td>61% v 93% (p=0.01)</td>
<td>Small numbers</td>
</tr>
<tr>
<td></td>
<td>Needle aspiration (33) v thoracic drainage (28)</td>
<td></td>
<td>Hospital stay</td>
<td>No significant difference</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Recurrence rate by 3 months</td>
<td>No significant difference</td>
<td>Hospital stay prolonged in needle aspiration group as procedure not carried out for 72 h in most patients</td>
</tr>
</tbody>
</table>

(P)RCT = (prospective) randomised controlled trial.