Audit of the management of hot and swollen joints

Dr Jai Adhupiya (ACCS CT2 Trainee) & Dr D. Makkuni (Consultant Rheumatologist)
James Paget University Hospitals NHS Foundation Trust, Gorleston, Great Yarmouth, United Kingdom
jai.adhupiya@nhs.net

Study of management of hot and swollen joints at the JPUH

<table>
<thead>
<tr>
<th>Cases</th>
<th>98</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pt. identifier</td>
<td>Microbiology synovial fluid reports</td>
</tr>
<tr>
<td>Data collection</td>
<td>Retrospective</td>
</tr>
<tr>
<td>Time period</td>
<td>2008-9</td>
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<tr>
<td>Data source</td>
<td>Microbiology reports, clinical notes</td>
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</tbody>
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Objectives
To assess practice of managing hot and swollen joints at the JPUH when compared with British Society of Rheumatology guidelines (BSR)

Recommendations from the BSR

Synovial fluid investigations (Ix)
- Needle aspirate synovial fluid, gram stain and culture prior to antibiotics (abx)
- Refer infected prosthetic joints to Orthopaedic surgeons
- If high clinical suspicion, it is imperative to treat as Septic Arthritis (SA), even in the absence of organism on Gram stain and negative culture/lab markers
- Fresh samples obtained prior to starting abx
- Crystal evaluation by Polarizing Microscopy

Lab Ix
- Blood cultures should always be taken
- WCC,ESR and CRP are helpful to monitor response to treatment
- U&E/ LFTs - help detect end-organ damage (poor prognosis SA!)
- renal function and the choice of abx

Imaging
- MRI most sensitive in diagnosing Osteonecrosis (??surgical approach)
- Gram stain ASAP - early targeted abx therapy
- Initial abx therapy to reflect
  - common organisms (S. aureus, Streptococcus)
  - Gram –ve organisms (elderly, immunosuppression, known sources)
  - MRSA in ‘at risk’ groups (Nursing Home residents, recent in-patients)
  - N. Gonorrhoea; shorter and less intensive courses of abx
  - Atypical organisms (demographics and clinical risk data)

- abx therapy amended when results on MAC and specificity available
- Optimal duration of abx- no evidence available yet!
  - IV route: for upto 2 weeks or until signs improve
  - Oral route: for about 4 weeks
  - Symptoms / signs / acute phase responses are helpful in guiding to stop abx
  - Expert review if expected resolution doesn’t occur

Initial Presentation

Septic Arthritis (age group)

Range of diagnosis confirmed

<table>
<thead>
<tr>
<th>Organism</th>
<th>Range of diagnosis</th>
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<tbody>
<tr>
<td>Unknown</td>
<td>47/98 (48%)</td>
</tr>
<tr>
<td>Staphylococcus aureus</td>
<td>9/98 (10%)</td>
</tr>
<tr>
<td>MRSA</td>
<td>3/98 (3%)</td>
</tr>
<tr>
<td>Coagulase negative staphylococci</td>
<td>6/98 (6%)</td>
</tr>
<tr>
<td>Enterococcus</td>
<td>6/98 (6%)</td>
</tr>
<tr>
<td>Pseudomonas</td>
<td>5/98 (5%)</td>
</tr>
<tr>
<td>Peptostreptococci</td>
<td>5/98 (5%)</td>
</tr>
<tr>
<td>Peptococcus</td>
<td>5/98 (5%)</td>
</tr>
<tr>
<td>Blood</td>
<td>4/98 (4%)</td>
</tr>
</tbody>
</table>

Patients with SA who received a total of 6 weeks of abx (IV & PO)

Patients with Crystal-induced arthropathy who received abx

Outcome

Recurrent of SA (within 6 months)

Conclusions
- Septic Arthritis presented in 10% cases
- Only one case of MRSA: septic arthritis
- No delays in diagnosing SA
- Synovial fluid aspirated in all cases
- Blood cultures done only in 15% cases
- Under-measured inflammatory markers: ESR only in 48% cases whereas CRP 66%
- Poor clinical note-keeping (upto 11%)
- Absent discharge summaries in some cases
- 25% of patients with Crystal-induced arthropathy were unnecessarily treated with abx!
- Only 10% of patient with SA received the recommended full 6 weeks of abx therapy!
- High recurrence rate for SA (50%)

Action Plan – Local JPUH Guideline for Managing Hot and Swollen Joints

References

BSR & BHR, BOA, RCGP and BSSC Guidelines for the management of the hot swollen joints in adults (2006)