Preoperative Screenings for Elective Orthopaedic Surgeries – A Closed Loop Audit

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Introduction

Blood screening has become so accessible that preoperative tests are carried out routinely. However, this has also led to unnecessary requests for blood tests which could be a drain on the health service resources. An audit was done from May 2015 to June 2015 to observe current practices of the Orthopaedic Department at Ninewells Hospital. 24% of the patients had unjustifiable blood tests done. The department had wasted £65.22 during that one-month audit period, which would have amounted to £782.64 in a year. Since then, foundation doctors have been briefed to only repeat blood tests if the previous blood tests were abnormal or more than 3 months old.

Aim

To re-audit the elective preoperative blood tests practice by the foundation doctors since the induction briefing.

Results

- 46 females and 33 males with mean age of 56 and BMI of 28.4kg/m².
- 56% of patients had ASA 2
- 50% had Surgical Severity of 4 (Arthroplasty)
- Average waiting days from pre-assessment to day of surgery were 82 days
- Only 14 patients required additional FBC and U&E on admission

Figure 1: Unjustifiable blood tests in audit and re-audit

<table>
<thead>
<tr>
<th>Blood tests</th>
<th>Number of patients with unjustifiable blood tests</th>
<th>Reasons for Unjustification</th>
</tr>
</thead>
<tbody>
<tr>
<td>FBC, U&amp;E</td>
<td>16 (20%)</td>
<td>Tests not repeated when more than 3 months between PAC and Day of Surgery</td>
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<tr>
<td></td>
<td></td>
<td>Repeats when bloods were within 3 months</td>
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<td></td>
<td></td>
<td>Repeats when PAC values were of normal range</td>
</tr>
<tr>
<td>G&amp;S</td>
<td>2 (6%)</td>
<td>Done on patients who did not have major joint surgeries</td>
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<tr>
<td>Coagulation Screen</td>
<td>5 (3%)</td>
<td>Done on patients not on anticoagulants</td>
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<td></td>
<td></td>
<td>Done on patients taking Aspirin</td>
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<tr>
<td>LFT</td>
<td>6 (7.6%)</td>
<td>Done on patients with no liver disease</td>
</tr>
</tbody>
</table>

Table 1: Unjustifiable blood tests

Table 2: Costs of Unnecessary Blood tests

Discussion

- The re-audit showed a decrease in unnecessary blood tests.
- The department has wasted £79.12 during the re-audit month on unnecessary blood tests (not taking into account the equipment’s spending).
- Based on this assumption, the department would have wasted £949.44 on blood tests yearly (Larger patient group must be taken into account when reviewing total cost of tests in the re-audit).

Figure 1: Unjustifiable blood tests in audit and re-audit

Blood Tests | Cost per patient tested at NHS Tayside (£) | Number of tests (May-June 2015) | Number of tests (Oct- Nov 2015) | Cost x Number of tests (£) | Audit | Re-audit |
--- | --- | --- | --- | --- | --- | --- |
Full Blood Count (FBC) | 2.33 | 12 | 16 | 27.96 | 37.28 |
Renal Function (U&E) | 1.30 | 12 | 16 | 15.60 | 20.80 |
Coagulation Screen | 2.66 | 2 | 5 | 5.30 | 13.25 |
CRP | 1.01 | - | 1 | - | 1.01 |
Liver Group (LFT) | 1.07 | 4 | 5 | 4.28 | 5.35 |
Bone Group | 1.07 | 5 | - | 5.35 | - |
Liver and Bone Group (request simultaneously) | 1.43 | 1 | 1 | 1.43 | 1.43 |

Total: £ 59.92 £79.12

Conclusion

There is a decrease in unnecessary blood tests. However, the high number of unnecessary FBC’s and U&E’s implies that more teachings need to be done to ensure good clinical practice by foundation doctors.

References:
1. Orthopaedic FY Induction Pack