Radiological Guided Renal Biopsy Audit

Dr C Stoddart C, Dr C Miller, Dr H Ramotar, Dr H Lambie, Dr J Smith
Department of Radiology, St James University Hospital, Leeds Teaching Hospitals NHS Trust

Background
Renal biopsies assess the histopathological diagnosis of native (N) and transplant (T) renal disease. Adequate samples are necessary for diagnosis to enable prompt treatment of patients.

Aim
To assess diagnostic adequacy and complications of renal biopsies.

Standard
N: Local pathology guidelines/previous literature\(^1,2\)
T: Banff Criteria\(^3\)

Indicator

<table>
<thead>
<tr>
<th>Target</th>
<th>Adequate &gt;75%</th>
<th>Re-biopsy &lt;5%</th>
<th>Complications &lt;1%</th>
</tr>
</thead>
</table>

Methodology
- Retrospective analysis of US guided renal biopsies
- Histology compared with national standard\(^2\)
- Complications identified using RIS and patient notes
- Inclusion Criteria
  - Patients >18 years
  - Renal biopsies performed in radiology department

Results of 1st Audit Round
- 6 year period (2010-15)
- Single consultant; 21 trainees under his supervision
- Total number: 190

<table>
<thead>
<tr>
<th>Number</th>
<th>Native</th>
<th>Transplant</th>
</tr>
</thead>
<tbody>
<tr>
<td>95%</td>
<td>4%</td>
<td>15%</td>
</tr>
<tr>
<td>Mean no. of Glomeruli</td>
<td>15</td>
<td>13</td>
</tr>
<tr>
<td>Adequate Sample</td>
<td>75%</td>
<td>50%</td>
</tr>
<tr>
<td>Re-biopsy</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Complications</td>
<td>0.5%</td>
<td></td>
</tr>
</tbody>
</table>

Results of 2nd Audit Round
- 1 year Period (2017)
- 7 consultants; 14 trainees under their supervision
- Total number: 307

<table>
<thead>
<tr>
<th>Number</th>
<th>Native</th>
<th>Transplant</th>
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</thead>
<tbody>
<tr>
<td>59%</td>
<td>41%</td>
<td>12%</td>
</tr>
<tr>
<td>Mean no. of Glomeruli</td>
<td>12</td>
<td>16</td>
</tr>
<tr>
<td>Adequate Sample</td>
<td>57%</td>
<td>67%</td>
</tr>
<tr>
<td>Re-biopsy</td>
<td>3%</td>
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<tr>
<td>Complications</td>
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</table>

References

1st Action Plan
- Results presented at departmental audit meeting
- Close supervision of trainees learning to perform renal biopsies
- Importance of sample adequacy recognised
- Departmental standard set:
  - <5% requiring re-biopsy
  - <1% complications requiring intervention
- Whole department audit agreed for full year 2017

2nd Action Plan
- Results presented at local & regional audit meetings
- Lead consultant appointed to supervise biopsies
- Presentation to staff on technique
- Annual departmental re-audit
- Registrars starting intervention block to have the first 5 biopsies directly supervised
- Registrars should analyse their results and review at the end of placement appraisal
- In room pathologist for “hot” assessment