Audit of Reports of CT Brain scans for suspected dementia

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Background
Neuroimaging is integral to the diagnostic workup of dementia.
This is to exclude potentially treatable causes of cognitive impairment and improve the accuracy of diagnosis by identifying zonal changes and the extent of cerebrovascular disease.\(^1,\(^2\)\)
CT scan with coronal reformats is probably the most cost effective first line option available, though MRI is more sensitive and is required where a rare condition is suspected.\(^3\)
This audit aims to assess the performance of reporting on CT Brain scans in patients with suspected dementia, to determine whether all relevant information is included in the report. The hope is to maximise the diagnostic value of the report to the requesting clinician.

Standard
After discussion with local old age psychiatry and review of national guidelines it was decided that the following criteria should be mentioned in each report:
1. Extent of global atrophy.
2. Evidence of focal or zonal atrophy
3. Extent of chronic microvascular ischaemic change
4. Evidence of previous lacunar or arterial territory infarcts.

Indicator
Percentage of reports which mention all 4 criteria.

Target
The target is 100%.

Methodology
RIS was searched for outpatient CTs performed as part of the investigation of suspected dementia between 1 January 2015 and 30 June 2015.
62 scans were found and their reports scored against the selected criteria.

Results

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Documented in report</th>
<th>Not documented</th>
<th>Overall percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Extent of global atrophy for age</td>
<td>56</td>
<td>6</td>
<td>90.3%</td>
</tr>
<tr>
<td>2. Evidence (or lack of) of focal or zonal atrophy</td>
<td>17</td>
<td>45</td>
<td>27.4%</td>
</tr>
<tr>
<td>3. Extent of white matter change microvascular ischaemic change</td>
<td>41</td>
<td>21</td>
<td>66.1%</td>
</tr>
<tr>
<td>4. Evidence (or lack of) of previous or current lacunar or arterial territory infarcts</td>
<td>14</td>
<td>48</td>
<td>22.5%</td>
</tr>
</tbody>
</table>

Number criteria included in report 0 1 2 3 4 Total 5 11 27 13 6

Action Plan
Create a standard template with dictation short cut to improve report consistency.
Increase staff awareness by giving a short education session at the radiology audit meeting.
Re-audit the same period next year.

References

Education sheet for Reporting CT Brains for suspected Dementia

What does the referrer need to know?
- Extent of global atrophy
- Evidence of focal or zonal atrophy - especially medial temporal lobes
- Extent of white matter microvascular ischaemic change
- Evidence of previous lacunar or arterial territory infarcts.

Approach
1. Mention all factors, including relevant negatives.
2. Systematic approach.
3. Consider use of visual rating scales to improve sensitivity and internal consistency of descriptive reports.

Optimal plane for assessment of the medial temporal lobes
Coronally reformatted images reconstructed perpendicular to the long axis of the temporal lobe.

Consistent slice position through the corpus of the hippocampus, at the level of the anterior pons

Negative scan angle