Fixed Dose Radioactive Iodine Treatment for Hyperthyroidism- Experience of a District General Hospital

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Background

- The short-term and long-term clinical outcome of patients receiving radioactive iodine (RAI) treatment for thyrotoxicosis differs in various studies.
- There is little consensus regarding the most appropriate dose of RAI to be administered.
- The range of activities currently prescribed varies between 200–800 MBq, with majority of patients receiving 400–600 MBq.
- In our centre, all patients receive a standard fixed dose of 400 MBq. Treatment is considered to have failed, if patients remain hyperthyroid at 12 months and a repeat 400 MBq is considered.

Aim

To determine:
- The number of patients who remained hyperthyroid one year post RAI treatment
- The number of patients who required a second dose of RAI
- The cure rate with a dose of 400MBq at the end of one year

Method

- We did a retrospective study of all patients treated with RAI at our hospital over a 3 year period.
- All patients received a fixed 400 MBq dose.
- TSH and FT4 levels were recorded at diagnosis, the time of RAI, 6 months and one year post-RAI.
- Anti-thyroid medication was discontinued for 10 days prior to RAI therapy.
- Failure rate in terms of persistence of hyperthyroidism at the end of one year was calculated.

Results

- 59 patients were included in the audit.
- 16 patients were male
- 43 patients were female
- Average age: 59.14 yrs (ranging from 25-88 years)

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Number of patients</th>
</tr>
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<tbody>
<tr>
<td>Multinodular</td>
<td>15</td>
</tr>
<tr>
<td>Grave's Disease</td>
<td>19</td>
</tr>
<tr>
<td>Thyrotoxicosis (not clinically classified)</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>59</td>
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</tbody>
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At the time of diagnosis:
- 37%(22 patients) had goitre
- 14%(8 patients) had thyroid ophthalmopathy
- 22%(13 patients) were positive for antiTPO antibody
- 94.91%(56 patients) were pre-treated with anti-thyroid drugs

Thyroid Status Post-RAI:

6 Months
Hypothyroid/ Euthyroid= 81.36% (48 patients)

12 Months
Hypothyroid/ Euthyroid = 76.27% (45 patients)

Multiple Doses of RAI:
Of 59 patients investigated 6 patients required multiple doses of RAI:
2 had previous doses of RAI
4 received future doses of RAI

Conclusion

In our centre, a standard 400MBq dose of RAI has a cure rate of 81.36% at 6 months and 76.27% at 12 months, which is in line with the figures quoted in the literature.