BCCA Protocol Summary for Radioiodine Imaging and Treatment in Patients with Thyroid Cancer Using Thyrotropin Alpha

Protocol Code: HNOTTSH

Tumour Group: Head and Neck

Contact Physician: Dr. Jonn Wu

ELIGIBILITY:
Any one of the followings:

▪ patients being prepared for postoperative iodine ablation of thyroid remnants
▪ significant morbidity after thyroxine withdrawal in the past or contraindications to thyroxine withdrawal/hypothyroidism (e.g., psychiatric, psychological or occupational concerns)
▪ If the stimulated serum thyroglobulin was greater than 2 microgram/L at the time of initial ablation/therapy, and patients being prepared for:
  ▪ TSH-stimulated serum thyroglobulin measurement
  ▪ PET scan after receiving radioiodine for postoperative ablation of thyroid remnants
  ▪ iodine therapy of local or metastatic disease

EXCLUSIONS:

▪ minimal morbidity after previous thyroxine withdrawal
▪ pregnant women

TESTS:

▪ 24 hours after final thyrotropin alpha injection: TSH
▪ If clinically indicated, baseline and 72 hours after final thyrotropin alpha injection: serum thyroglobulin

PREMEDICATIONS:

▪ Not usually required (see Precautions).

TREATMENT:

<table>
<thead>
<tr>
<th>Drug</th>
<th>Dose</th>
<th>BCCA Administration Guideline</th>
</tr>
</thead>
<tbody>
<tr>
<td>thyrotropin alpha</td>
<td>0.9 mg IM* q24h x 2 doses</td>
<td>IM</td>
</tr>
</tbody>
</table>

*Injections to be given in the gluteal muscle.
- Give radioiodine (for scanning or ablation) or FDG 24 hours following the final thyrotropin alpha injection.
- Perform PET scan the same day as FDG is administered.
- Iodine scan is performed 48 hours after radioiodine (72 hours following the final thyrotropin injection).

**Example of treatment/tests schedules for scanning:**

<table>
<thead>
<tr>
<th>Day</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monday</td>
<td>thyrotropin alpha IM 0.9 mg</td>
</tr>
<tr>
<td>Tuesday</td>
<td>thyrotropin alpha IM 0.9 mg</td>
</tr>
<tr>
<td>Wednesday</td>
<td>- TSH test (lab), then</td>
</tr>
<tr>
<td></td>
<td>- FDG administration followed by PET scan</td>
</tr>
<tr>
<td>Thursday</td>
<td>-</td>
</tr>
<tr>
<td>Friday</td>
<td>- Thyroglobulin test (lab),</td>
</tr>
<tr>
<td></td>
<td>- if positive then iodine scanning and uptake measurement (Nuclear Medicine) or PET scan; if negative, no iodine scanning and uptake measurement</td>
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<tr>
<td></td>
<td>- if less than 2, then no further thyrotropin treatment</td>
</tr>
</tbody>
</table>

**PRECAUTIONS:**

1. **Hypersensitivity:** Reactions have been reported with thyrotropin alpha including urticaria, rash, pruritus and flushing. Refer to BCCA SCDRUGRX protocol.
2. **Metastases:** Four patients out of 55 (7.3%) with CNS metastases had acute hemiplegia, hemiparesis or pain attributed to local edema or focal hemorrhage at the metastatic site 1-3 days after thyrotropin alpha. Other reports include a case of acute visual loss associated with optic nerve metastases and a case of dysphagia secondary to laryngeal edema (requiring tracheotomy) associated with paratracheal metastases. Pre-treatment with corticosteroids may be considered.
3. **Cardiac disease:** In the presence of significant residual thyroid tissue, thyrotropin alpha-induced hyperthyroidism may exacerbate existing cardiac conditions.

Call Dr. Jonn Wu or tumour group delegate at (604) 877-6000 or 1-800-663-3333 with any problems or questions regarding this treatment program.

**Date activated:** 01 Feb 2003

**Date revised:** 1 May 2017 (Eligibility updated)

**References:**