

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 iodine or PET scan after receiving radioiodine for postoperative ablation of thyroid remnants, or treatment of metastatic disease (Note: serum thyroglobulin before last ablation or treatment must be greater or equal to 2 microgram/L, or there was evidence of iodine uptake outside thyroid bed on post treatment scan)
- patients being prepared for postoperative iodine ablation of thyroid remnants
- significant morbidity after thyroxine withdrawal in the past or contraindications to synthroid withdrawal/hypothyroidism (e.g., psychiatric, psychological or occupational concerns)
- patient is aware that thyrotropin is a less effective preparation for iodine scanning than thyroxine withdrawal
- patients who are unable to mount an adequate endogenous TSH response to thyroid hormone withdrawal (eg, hypopituitarism)
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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:

Drug	Dose	BCCA Administration Guideline
Thyrotropin alpha	0.9 mg q24h x 2 doses	IM

- 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:

Monday	Thyrotropin alpha IM 0.9 mg
Tuesday	Thyrotropin alpha IM 0.9 mg
Wednesday	- TSH test (lab), then - FDG administration followed by PET scan
Thursday	–
Friday	- Thyroglobulin test (lab), - if positive then Iodine scanning and uptake measurement (Nuclear Medicine) or PET scan; if negative, no iodine scanning and uptake measurement - if less than 2, then no further thyrotropin treatment

PRECAUTIONS:

1. **Hypersensitivity:** Reactions have been reported with thyrotropin alpha including urticaria, rash, pruritus and flushing. Refer to BCCA Hypersensitivity Guidelines.
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 Jul 2010 (protocol and physician name change)

References:

1. Hassey Dow K, Ferrell BR, Anello C et al. Quality of life changes in patients with thyroid cancer after withdrawal of thyroid hormone therapy. *Thyroid* 1997;7:613-9.
2. Ladenson PW, Braverman LE, Mazzaferri EL et al. Comparison of administration of recombinant human thyrotropin with withdrawal of thyroid hormone for radioactive iodine scanning in patients with thyroid carcinoma. *N Engl J Med* 1997;337:888-96.
3. Mazzaferri EL, Kloos RT. Current approaches to primary therapy for papillary and follicular thyroid cancer. *J Clin Endocrinol Metab* 2001;86:1447-63.