Vol 04, Issue 01, 13 July 2026

The Bulletin from the Clinical Pharmacist

Author: Dr Haris Madhavan N, Clinical Pharmacist, Kauvery Cancer Institute, Trichy

Thyrotropin Alfa

Overview: Thyrotropin alfa is a recombinant form of human thyroid stimulating hormone approved by the FDA in 1998 for the diagnostic follow up of patients with well-differentiated thyroid cancer after thyroidectomy. In 2007, its indication was expanded for use as an adjunct to radioactive iodine (RAI) remnant ablation in patients without evidence of distant metastases.

Mechanism of Action: Thyrotropin Alfa stimulates Thyroglobulin (Tg) releases from thyroid remnants through cAMP activation for diagnostic testing. After complete thyroidectomy/ablation, Serum Tg should be low; conversely, elevated Tg levels suggest the presence of remnant thyroid tissues.

As an adjunct to radioiodine ablation, thyrotropin alfa binds to TSH receptors on these tissues, stimulating the uptake and organification of iodine, including radiolabeled iodine (I^{131}).

Indications: Diagnostic imaging & Thyroid tissue remnant ablation.

Dosing Adult: 0.9 mg, followed 24 hours later by a second 0.9 mg dose (Diagnostic imaging - obtain serum Tg sample 72 hours after the second thyrotropin alfa injection.)

Administration: Administer only by IM injection into the buttock. Do not administer IV.

Dosage Adjustment:

Altered Kidney/Liver Function: No dosage adjustment required/recommended.

Special Population:

Pregnancy Considerations: Use of thyrotropin alfa administered with radioiodine is contraindicated during pregnancy.

Breastfeeding Considerations: It is not known if thyrotropin alfa is present in breast milk. Thyrotropin alfa administered with radioiodine is contraindicated in breastfeeding women.

Adverse Drug Reaction: Nausea, Headache, Dizziness, Flu like symptoms, Hypersensitivity reactions, Injection site reactions, stroke or symptoms suggestive of stroke.

Monitoring Parameters: Monitor for neurologic adverse events (hemiplegia, hemiparesis, stroke, weakness); dyspnea, dysphonia, stridor or other symptoms of local tumor growth, signs/symptoms of hyperthyroidism.

Test Interactions: Thyroglobulin assay may be confounded by thyroglobulin antibodies, possibly leading to misinterpreted or difficult to interpret thyroglobulin levels. Routine measurement of TSH levels after thyrotropin alfa use is not recommended.