

TSH responses to synthetic TRH despite their high basal TSH levels. Patients with Sheehan's syndrome revealed failure of serum TSH responses to synthetic TRH.

It can be concluded that TRH stimulation that

would be useful as a means of detecting early forms of hypothyroidism and hyperthyroidism in the absence of abnormalities in conventional indices of thyroid function.

Use of ^{123}I for Thyroid Uptake and Scintigraphy

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Iodine-131 has long been used for the thyroid uptake test and thyroid scintigraphy in spite of its high gamma ray energy and its high radiation dose. Recently, cyclotron-produced ^{123}I has become available in our country. The purpose of this study is to evaluate ^{123}I for clinical use in place of ^{131}I . The ^{123}I preparations were supplied by The Physics and Chemistry Research Institute, and The Nihon Medi-Physics Incorporation. The gamma ray spectrometry with a Ge (Li) detector proved small quantities of ^{121}I and ^{124}I in the former products, and those of ^{124}I , ^{126}I , ^{130}I , and ^{131}I in the latter products. Thyroid uptake tests were performed with the standard techniques at 3 and 24 hours after oral administration of radioiodine, and the thyroid scintigraphy were made by a rectilinear scanner or a scintillation camera.

Thyroid uptakes of ^{123}I did not coincide so well with ^{131}I when the tests were performed one after another, but they coincided very well when patients were given both radioiodine simultaneously and measured by the double tracer technique. Thyroid scintigrams of ^{123}I were as excellent as those of ^{131}I except a few cases showed slight increment of the background density. The radioactivity of ^{123}I in the thyroid at 3 hours decays one third in 24 hours. Of 64 patients studied, 59 or 92% showed higher count rate in the thyroid region at 3 hours than 24 hours. The thyroid scintigram using ^{123}I , therefore, is better to be made in 3 to 6 hours while the radioactivity well remains in the thyroid tissue. Iodine-123 will soon become an useful agent for the thyroid studies in our country.