

The effect of an iodine restricted including no sea foods diet, on technetium-99m thyroid scintigraphy: A neglected issue in nuclear medicine practice

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Abstract

Although it is recommended to patients to avoid sea food and iodine-containing medications prior to iodine-131 (131I) scanning, the efficacy of this diet as for technetium-99m pertechnetate (^{99m}Tc-P) thyroid scintigraphy is not well addressed in the literature. We evaluated a self-managed, outpatients, iodine restricted diet (IRD) designed to reduce total body iodine in preparation for such a scan. We have studied 39 patients who referred to our Department for multinodular goiter, 30 females and 9 males, aged: 14-54 years and their ^{99m}Tc-P thyroid scintigraphy showed poor visualization of the thyroid gland. These patients were living in regions with high consumption of sea foods went underwent a two-weeks iodine restriction including restriction of sea food diet for the reduction of iodine body content. These patients were called for a repeated scan after going on a IRD for at least two weeks. The two scans were compared visually, and by semiquantitative analysis. Semiquantitative analysis was applied in 8 regions of interest (ROI) by using Wilcoxon signed rank test. Thirty-six subjects had better quality scintigraphy images in the post IRD thyroid scan, as was visually assessed by two nuclear medicine physicians. Semiquantitatively, there was a significant difference in the mean counts of ROI of the right and the left thyroid lobes in favor of the post IRD scans (P<0.05). In conclusion, this study suggests that in patients with multinodular goiter, living in regions with high consumption of sea foods a two-weeks diet for the reduction of iodine body content induces in most of the cases a slightly better diagnostic thyroid ^{99m}Tc-P scan.

Author Keywords

^{99m}Tc-pertechnetate; Iodine restricted diet (IRD); Seafood; Thyroid scintigraphy; Total body iodine (TBI)

Index Keywords

iodine, technetium 99m; adolescent, adult, article, clinical article, clinical assessment, controlled study, diagnostic imaging, diagnostic test accuracy study, diet restriction, female, food intake, human, image quality, male, medical practice, nuclear medicine, physician, quantitative analysis, sea food, sensitivity and specificity, single photon emission computer tomography, thyroid gland, thyroid scintiscanning, toxic goiter; Adolescent, Adult, Artifacts, Female, Goiter, Humans, Image Enhancement, Iodine, Male, Middle Aged, Radiopharmaceuticals, Reproducibility of Results, Seafood, Sensitivity and Specificity, Technetium, Thyroid Gland, Tomography, Emission-Computed, Single-Photon

Chemicals/CAS

iodine, 7553-56-2; technetium 99m, 14133-76-7; Iodine, 7553-56-2; Radiopharmaceuticals; Technetium, 7440-26-8

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