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Effect of Mouth Rinsing With Two Polyvinylpyrrolidone-Iodine Mixtures on Iodine Absorption and Thyroid Function

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Abstract

A prospective study was conducted to investigate the effect of long term therapy with two iodine-containing mouth rinses on thyroid function. Two groups of subjects were treated daily for 6 months with either a 5% polyvinylpyrrolidone (PVPI)-1.5% H₂O₂ mixture (Perimed) or a 5% PVPI-water mixture. Thyroid function studies, serum iodine concentrations, and urinary iodine excretion were measured before treatment, at 6-week intervals during the 6-month treatment period, and 3 weeks after the last treatment. There was evidence of significant iodine absorption (elevated serum total iodine and inorganic iodide concentrations and urinary iodine excretion) from daily use of both Perimed and the PVPI-water mixture. Serum T₃ and T₄ concentrations and the free T₄ index did not change. There was a small significant rise in serum TSH concentrations during mouth rinse therapy, but all values remained within the normal range. This small increase in serum TSH is a normal adaptive response to the antithyroid effect of increased iodine intake and accounts for the maintenance of normal serum T₄ and T₃ concentrations. While daily use of these iodine-containing mouth rinses does result in significant iodine absorption, there is no evidence for the development of thyroid dysfunction during a 6-month course of therapy.

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