Radioprotective agents for the prevention of side effects induced by radioiodine-131 therapy

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Abstract
Radioiodine 131 (I-131) has been used worldwide for the ablation of remnant thyroidal tissue after surgery or as the first-line treatment for Graves' disease. Although the use of I-131 is becoming increasingly prevalent, there is evidence suggesting that this treatment is associated with side effects such as salivary gland dysfunction and an increased risk of leukemia. This article aims to review the potential use of radioprotective agents and the side effects induced by I-131 therapy. Several synthetic and natural compounds have been investigated in preclinical and clinical studies. The protective agents reduced the toxicity of I-131, mainly in the salivary glands, and mitigated the genetic damage through different mechanisms. There are limited clinical studies evaluating the use of radioprotective agents in patients undergoing radioiodine therapy. However, lemon candies, lemon juice and sugarless chewing gum have been proposed to be beneficial for minimizing the side effects of radioiodine within the salivary glands.

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