Is herbal therapy safe in obesity? A case of Apium graveolens (Celery) induced hyperthyroidism

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Case Report

Abstract

BACKGROUND: Apium graveolens is one of the well-known herbs used for the treatment of different; however, allergic reactions have been reported after its use. This report aimed to demonstrate the A. graveolens induced hyperthyroidism after its oral consumption for weight loss.

CASE REPORT: Mr. A, 48-year-old, with no history of any thyroid diseases, was diagnosed with hyperthyroidism due to daily consumption of 4 g of dried celery leaves for 45 days. After cessation of consumption and treatment with methimazole, the symptoms remitted. Then, the medication was discontinued when the lab tests and ultrasound were normal and indicated the patient's definite recovery. In 2 months follow up of, he was normal and thyroid-stimulating hormone (TSH), T4, T3, anti-TSH receptor, anti thyroperoxidase and antithyroglobulin were in normal ranges.

CONCLUSION: Hyperthyroidism may be induced by consumption celery. Although many studies have reported side effects such as allergic reactions for this herb, this is the first report of hyperthyroidism induced by celery in which the patient recovered after discontinuing the medication. Therefore, it can be assumed that celery induces hyperthyroidism as a side effect of this herb if it is used for a long term.

Keywords: Hyperthyroidism, Celery, Obesity, Case Report

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Introduction

Medicinal herbs have long been ensued in the treatment of diseases. Human frustration with chemical drugs due to their relatively high side effects and peoples' believing that medicinal herbs have no side effects even if they have no benefits, led to an increased tendency toward medicinal herbs and herbal products.[1]

Celery, scientifically known as Apium graveolens, is one of the aromatic herbs belonging to Apiaceae family. Celery is known for its diuretic, laxative, sedative, antispasmodic, antifungal, lipid-lowering, antihypertensive, and anti-obesity effects.[2,3] In addition, it has strong antioxidant properties, increases breast milk secretions and reduces the toxicity of many drugs and all these effects have been proved,[4,5] so far central nervous system complications, abortion, allergic reactions and the risk of anaphylactic shock, especially if it is used with renin-angiotensin converting enzyme inhibitor drugs have been reported as the clinical side effects of this herb and animal studies have reported its role in increasing thyroid function tests.[6-8]

This report suggests the possibility of another important clinical side effect of this herb.

Case Report

Mr. A, who is 48-year-old, is 88 kg and has a body mass index of 26.3, began taking 4 g/day of celery powder that purchased from the sale of medicinal herbs center and checked and approved by the Medicinal Plants Research Center, for 45 days to lose weight. His medication history showed losartan 25 mg/bid. Five days before taking the herb, checkup testing was performed, and all components of the test were reported normal. After 45 days,

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patient's weight reduced from 88 to 84.5 kg. The patient went to the physician for a check-up. According to the patient's physical conditions, including weight loss, exophthalmos, and sweating, the physician prescribed thyroid function tests for him. The test report read thyroid-stimulating hormone (TSH) value and T4 level as 0.011 mlU/l and 13.1, respectively. Then, for differential diagnosis of hyperthyroidism anti thyroperoxidase, antithyroglobulin, anti TSH receptor and thyroid scan performed and all of them was normal and thyroiditis, graves diseases, and drug-induced thyrotoxicosis ruled out. The patient began taking methimazole 5 mg/bid daily. After 15 and 30 days, TSH values reached 0.059 mIU/l and 0.125 mIU/l, respectively, and T4 level became normal. Then, the dosage of methimazole was reduced to 5 mg/day and after 15 days, TSH value and T4 level reached 0.35 mIU/l and 4.49 mIU/l, respectively. Then, the result of thyroid ultrasound and TSH concentration were reported normal and 15 days after discontinuation of methimazole, the patient's recovery was confirmed. He had normal thyroid function tests in 2 months follow-up.

Discussion

According to patient's previous state and his normal thyroid function tests, we suppose that patient's hyperthyroidism is associated with celery consumption. Furthermore, patient's subsequent weight loss can be attributed to this side effect. Celery is used in formulations of herbal anti-obesity products.[9]

Furthermore, the patient reported that skin eruptions appeared all over his body while he was using this herb, which may be attributed to its allergic reactions.[10] According to experimental studies, celery affects thyroid function tests[11] which is consistent with this study. Therefore, we recommend that celery not be used in patients with hyperthyroidism and that the thyroid function tests be taken into consideration carefully.

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Conflict of Interests

Authors have no conflict of interests.

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