Clinical Oncology (2005) **17**: 492–493

Correspondence

doi:10.1016/j.clon.2005.05.001

Hypothyroidism in Thyroid Carcinoma Follow-up: Orlistat May Inhibit the Absorption of Thyroxine

Sir — Orlistat is used in the management of obesity to reduce the absorption of fat. Thyroxine is used in the management of well-differentiated thyroid cancer to suppress thyroid-stimulating hormone (TSH) production. We report a case of symptomatic hypothyroidism occurring after the commencement of orlistat in a patient with papillary carcinoma of the thyroid.

After total thyroidectomy and radio-iodine ablation, suppression of TSH by the anterior pituitary is part of the standard management of differentiated thyroid cancer [1]. Doses of thyroxine in the order of 175–200 μg are commonly required to produce adequate suppression [2]. Orlistat is a recently licenced drug used in obesity management. Orlistat promotes weight loss by reducing the absorption of energy dense fat. It is a potent inhibitor of pancreatic and gastric lipases, allowing about 30% of dietary fat to pass through the gastrointestinal tract unabsorbed [3].

A 46-year-old woman was diagnosed in August 2002 with papillary carcinoma of the thyroid. After completing thyroidectomy in September 2002, and radio-active iodine (I^{131} 3000 MBq) ablation therapy in December 2002, she was commenced on 250 μg of thyroxine daily. Thyroid function tests carried out in May 2004 revealed serum thyroxine (T4) level of 25.2 pmol/L and TSH 0.03 mU/L, indicating nearly adequate suppression of TSH.

In June 2004, she was commenced on orlistat by her general practitioner. Within 2 weeks, she experienced hypothyroid symptoms in the form of tiredness, lethargy and cold intolerance. Biochemically, she was found to be profoundly hypothyroid with T4 7 pmol/L and TSH 73.6 mU/L. During this period, the patient's husband witnessed good compliance with medication.

The woman was advised to discontinue orlistat, and her thyroxine was increased to 300 mcu once daily. Within 2 weeks, her symptoms improved. Repeat blood tests carried out 4 weeks later showed TSH 0.02 mU/L and T4 31.7 pmol/L.

Causes of inadequate TSH suppression include inadequate thyroxine dose due to poor patient compliance or reduction to a replacement dose by the general practitioner. Clear communication of the rationale behind TSH suppression is therefore essential. In this case, the patient had been compliant with thyroxine for 18 months as indicated by her previous biochemistry, and both the patient and her husband were adamant that she had continued to comply.

Orlistat has been associated with gastrointestinal adverse events, including diarrhoea, constipation, abdominal pain and flatulence. In addition, orlistat is known to cause malabsorption of fat soluble vitamins, hypocalcaemia, and, rarely, other electrolyte disturbances. Thyroid dysfunction is very rare [4].

Thyroxine has a bioavailability of 40–80% after oral administration. The extent of thyroxine absorption is increased in the fasting state, and is influenced by the content of the gastrointestinal tract. Some substances bind the thyroxine, making it unavailable for diffusion across the gut wall [5]. It may be that orlistat also binds to the thyroxine and prevents its absorption from the small intestine.

We believe that this is the first reported case of hypothyroidsm in a patient taking TSH suppressive dose of both thyroxine and orlistat. It is clearly important that clinical oncologists, thyroid surgeons, endocrinologists and general practitioners involved in the follow-up of thyroid cancer patients are aware of this potential interference of this drug with thyroxine absorption.

K. MADHAVA *Queen Elizabeth Hospital, Birmingham, UK*
A. HARTLEY

References

1 Halnan KE. Thyroid. In: Price P, Sikora K, eds. *Treatment of cancer*. London: Chapman and Hall, 1995. p. 367–390.
2 *Guidelines for the management of thyroid cancer in adults*. British Thyroid Association, Royal College of Physicians; March 2002.
3 Hollander PA, Elbein SC, Hirsch IB, *et al*. Role of orlistat in the treatment of obese patients with type 2 diabetes. A 1-year randomized controlled study. *Diabetes Care* 1998;21:1288–1294.
4 Mc Duffie JR, Calis KA, Booth SL, Uwaifo GI, Yanovski JA. Effects of orlistat on fat soluble vitamins in obese adolescents. *Pharmacotherapy* 2002;22:814–822.
5 Roberts G. Taking care of thyroxine. *Aust Prescr* 2004;27:75–76.

doi:10.1016/j.clon.2005.05.002

Hair Growth After Gefitinib Treatment

Sir — We report an interesting case of new hair growth after gefitinib treatment. A 57-year-old man with androgenic alopecia first presented with back pain in January 2004. A bone scan showed increased uptake in the sacrum, and the lumbar spine. A biopsy of the spine confirmed adenocarcinoma consistent with non-small-cell lung cancer. A computed

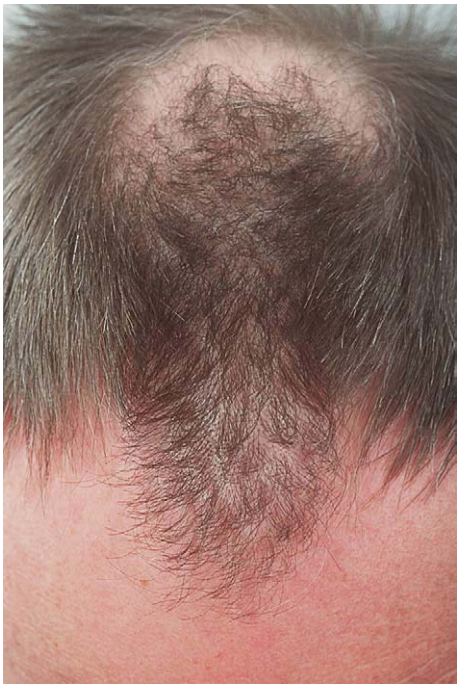

Fig. 1 – New hair growth on previous bald vertex.

0936-6555/05/000000+02 $35.00/0