



Hyperthyroidism treatment linked to weight gain

New research shows that successful treatment for hyperthyroidism may be associated with a significant risk of becoming overweight or obese. These findings were presented at the Society for Endocrinology conference in Harrogate, UK. Medical professionals should be aware of this association and provide patients undergoing treatment for hyperthyroidism with appropriate advice on the risk of becoming overweight. Further research is required to determine if lifestyle management techniques are useful in the prevention of this excessive weight gain.

Hyperthyroidism is a common endocrine condition where the thyroid gland becomes overactive and produces too much of the thyroid hormones, thyroxine (T_4) and tri-iodothyronine (T_3). This condition has a number of different causes including auto-immune disease and toxic thyroid nodules. It affects approximately two in 100 women and two in 1,000 men. If left untreated, it can cause serious health problems including heart failure and stroke.

Dr Kristien Boelaert and team from the University of Birmingham, UK studied 1047 patients who had been diagnosed with hyperthyroidism to determine whether their weight changed after treatment and investigate any risk factors for this.

They found that 69.4% (727) patients gained more than 5% of their presenting body mass over a median treatment duration of 22 months. 44.2% of patients who presented with a normal BMI became overweight or obese and 44.6% of patients who were overweight at presentation became obese. Patients were more likely to gain weight over the course of treatment if they had more severe hyperthyroidism ($p < 0.001$), they reported weight loss prior to treatment ($p < 0.001$) or their treatment took longer ($p = 0.001$). Men were also at significantly higher risk of gaining weight during treatment ($p = 0.05$). There was no effect of treatment type (antithyroid drugs versus radioactive iodine treatment) on the risk of gaining a minimum of 5% in body weight.

This is the largest dataset investigated on the effects of hyperthyroidism treatment on weight. It is important that clinicians and nurses are aware that weight gain is a common side-effect of hyperthyroidism treatment and work with their patients prior to, during and following treatment to advise on potential lifestyle interventions to prevent excessive gain.

Lead researcher Dr Kristien Boelaert from the University of Birmingham, said:

“Our data confirm anecdotal reports and results from very small studies indicating weight gain after treatment for hyperthyroidism is common. However, our study also shows which patients

are at higher risk of putting on weight, namely those with more severe hyperthyroidism, those reporting prior weight loss, men, and those whose treatment takes longer.

“It is very important that patients do not put off receiving treatment for hyperthyroidism due to concerns about weight gain, as delaying treatment can have serious consequences. Healthcare professionals working with patients with hyperthyroidism should be aware of these findings and should provide patients with advice on measures to minimise weight gain. We now plan to examine whether a package of lifestyle interventions can be developed which limits excessive weight gain in these patients.”

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Notes for editors:

This research is presented as a poster (P335) at the Society for Endocrinology BES meeting at 12:00-13:00 on Tuesday 20 March 2012. The abstract for this poster is reproduced at <http://www.endocrine-abstracts.org/ea/0028/ea0028p335.htm>:

The Society for Endocrinology BES 2012 conference is Britain’s biggest scientific meeting on hormones, and is taking place at the Harrogate International Centre from 19-22 March 2012. For the full programme, please click [here](#)

Please mention the Society for Endocrinology meeting in any story

For more information: contact the Society for Endocrinology press office

Toby Stead

Public & Media Relations Executive
Mob: +44 (0)7971 691 774
Tel: +44(0)1454 642 252
Email: toby.stead@endocrinology.org

Jennie Evans

Public & Media Relations Manager
Mob: +44 (0)7773 797 501
Tel: +44 (0)1454 642 230
Email: jennie.evans@endocrinology.org

The Society for Endocrinology is Britain’s national organisation promoting endocrinology and hormone awareness. For general information, please visit our website: <http://www.endocrinology.org>

For more information aimed at the general public on hyperthyroidism, endocrinology and hormones, please visit You & Your Hormones (www.yourhormones.info), the Society for Endocrinology’s public information website.

Patient support group

The British Thyroid Foundation is a patient-led charitable organisation dedicated to raising awareness and helping people with thyroid disorders. Website: www.btf-thyroid.org

Funding acknowledgement: This research was funded by the University of Birmingham.

ABSTRACT

Successful treatment of hyperthyroidism is associated with significant risks of becoming overweight or obese.

Barbara Torlinska, Jayne Franklyn, Roger Holder & Kristien Boelaert

School of Clinical and Experimental Medicine, University of Birmingham, Birmingham, United Kingdom.

Obesity is a global health concern and the proportion of overweight and obese people in the UK is rapidly increasing. Patients undergoing treatment for hyperthyroidism frequently express concerns regarding

excessive weight gain, especially when offered treatment with I-131. We investigated 1047 patients with overt hyperthyroidism to determine the extent of weight changes and to identify risk factors for weight gain following treatment. Overall, 727 (69.4%) patients gained $\geq 5\%$ of their presenting body mass; the mean gain was 9.9 ± 0.2 kg, resulting in a 3.6 ± 0.08 kg/m² BMI increase during 22.03 ± 0.42 months. 44.2% of patients with normal BMI at presentation became overweight or obese and 44.6% of overweight patients developed obesity at the end of treatment. Weight gain was most intense during the initial 6 months of treatment but continued relentlessly during 36 months when body weight had increased $>10\%$ ($p < 0.001$). At discharge, the proportions of obese men and women were significantly higher when compared with age and gender specific population of West Midlands ($p < 0.001$). Similar proportions of subjects gaining weight were observed in those treated with thionamides and subjects receiving one or multiple doses of I-131 (weight gain in 66.8%, 70.5%, 72.3% respectively, $p = \text{NS}$). The reporting of weight loss prior to presentation ($n = 702$, AOR:3.0, $p < 0.001$), higher presenting serum fT4 concentrations (AOR:1.01 per 1pmol/l, $p < 0.001$), longer treatment duration (AOR:1.02 per month, $p = 0.001$), and male gender ($n = 226$, AOR:1.44, $p = 0.05$) were independently associated with increased probabilities of weight gain. Patients' age, smoking status, ethnic origin, weight status at presentation, the treatment modality and the development of hypothyroidism were not associated with increased likelihoods of weight gain. Conclusion: Cure of hyperthyroidism is associated with marked weight gain and significantly increased risks of becoming overweight or obese, independent of the treatment modality employed. Subjects with more severe hyperthyroidism, those reporting prior weight, subjects requiring longer treatment and men are particularly at risk of gaining weight.