

Concern over "excessive" doses of thyroid drugs for older patients

April 29, 2011 - Many older adults may be taking "excessive" doses of drugs for thyroid problems which can lead to an increased risk of fractures, finds a study published on **bmj.com** today.

The study raises concern that treatment targets may need to be modified in the elderly and that regular dose monitoring remains essential even into older age.

Levothyroxine is a synthetic form of thyroxine (thyroid hormone) and is widely used to treat an underactive thyroid gland (hypothyroidism).

Most hypothyroid patients are diagnosed in early or middle adulthood but, as people age, their thyroxine requirements fall. Although regular monitoring of patients on levothyroxine is recommended, doses often remain unchanged into old age.

This can lead to excess thyroid hormone levels (hyperthyroidism) which can increase the risk of fractures, particularly in older women.

Previous studies of the association between levothyroxine and fractures have had mixed results, so a team of researchers in Toronto, Canada set out to measure the effect of levothyroxine dose on the risk of fractures in older adults.

Using population-based data from Ontario, Canada, the study included 213,511 people aged 70 years or older with at least one levothyroxine prescription dispensed between April 1, 2002 and March 31, 2007. Hospital records were used to identify fractures and each case was matched with up to five controls from within the group who had not yet fractured.

Cases and controls were defined as current users, recent past users (discontinued 15-180 days prior to study) or remote users (discontinued more than 180 days prior to study) of levothyroxine.

A total of 22,236 (10.4%) individuals experienced at least one fracture during the study period.

Compared with remote use, current and recent past levothyroxine use was associated with a significantly higher fracture risk. Among current users, high and medium doses of levothyroxine were associated with a significantly higher risk of fractures compared with low dose levothyroxine.

Even after taking account of other fracture risk factors, a dose-related association was seen in both men and women, for hip fractures as well as for any fracture.

The authors conclude: "Our findings provide evidence that levothyroxine treatment may increase the risk of fragility fractures in older people even at conventional dosages, suggesting that closer monitoring and modification of treatment targets may be warranted in this vulnerable population."

This view is supported in an accompanying editorial by Professor Graham Leese at Ninewells Hospital in Dundee, who warns that ideal thyroxine doses may vary with age and be unexpectedly low in elderly people.

It is 120 years since the effect of excess thyroid hormone on bone was first described, he writes, yet research in this area still lacks funding. "With the prevalence of treated hypothyroidism increasing, and the annual economic burden of fractures in the United Kingdom currently estimated at €5.8bn (£5.1bn; \$8.4bn), such research warrants a higher priority."

Contacts:

Research: Lorraine Lipscombe, Scientist at the Women's College Research Institute, Toronto, Canada

Email: jodi.salem@wchospital.ca

Editorial: Graham Leese, Professor of endocrinology and diabetes, Ninewells Hospital and Medical School, Dundee, UK

Email: grahamleese@nhs.net

For more information please contact: Emma Dickinson

Tel: +44 (0)20 7383 6529

Email: edickinson@bma.org.uk

Press Office telephone : 020 7383 6254 (Weekdays : 0900hrs - 1800hrs)

British Medical Association

BMA House, Tavistock Square, London WC1H 9JR