

T4 too? Thyroid disease and diabetes in primary care

It will not come as much of a surprise that thyroid disease is more common in people with diabetes and the association has been known for ages (Mouradian and Abourizk, 1983).

Thyroid disease, particularly hypothyroidism, is an autoimmune disease with over 75% of people having elevated levels of auto-antibodies (Vaidya and Pearce, 2008). The only problem is, that although this makes some sense in type 1 diabetes where detectable islet cell antibodies are very common, it makes much less sense in type 2 diabetes where genetics is not thought to be such a significant factor. There is little doubt, however, that thyroid disease, particularly hypothyroidism, is more common in people with type 2 diabetes, especially in women, although sub-clinical hypothyroidism may be no more common than in the rest of the population (Chubb et al, 2005). The aetiology is unclear, but the implications are important.

Hypothyroidism may increase the risk of hypoglycaemia, particularly for those taking insulin. Hypothyroidism also causes elevated levels of total cholesterol and triglycerides. This causes a particular problem: not only may the prescription of statins be unnecessary, as thyroid replacement therapy will reduce the cholesterol levels, but those with hypothyroidism are more likely to develop statin-induced myopathy (Bar et al, 2007).

Antithyroid antibodies are found in a third of newly diagnosed people with type 1 diabetes, but clinical autoimmune thyroid disease occurs in about 5%, often presenting as Hashimoto's thyroiditis (Hanukoglu et al, 2003), and less commonly as frank hyperthyroidism (Graves' disease). It is recommended to check for thyroid disease in all newly diagnosed people with type 1 diabetes and then every few years after diagnosis (The Association for Clinical Biochemistry et al, 2006). Additionally, the presence of antithyroid antibodies may be associated with a more severe progression of diabetes as part of the so-called "polyglandular syndrome", so it is important check for this in

addition to checking for coeliac antibodies. Interestingly, relatives of people with type 1 diabetes are more likely to develop thyroid problems than the rest of the population.

There are some specific situations where testing for thyroid disease is more important. In the year following giving birth, women with type 1 diabetes are at increased risk of developing both hypothyroidism and hyperthyroidism as part of post-partum thyroiditis, so changes in weight, unexpected hypoglycaemia or concentration problems should trigger further investigation. The other important area is the onset of atrial fibrillation, which may be related to either overt or, more commonly, sub-clinical hypothyroidism (Gammage et al, 2007).

In primary care we sometimes check thyroid function tests as part of the annual review, although some commentators have suggested that this is unnecessary – a view that is supported by data suggesting that subclinical hypothyroidism is no more common in people with type 2 diabetes than the rest of the population (Chubb et al, 2005). This has significant cost implications and it may be better to reserve thyroid function testing for those in which there is a clinical suspicion of an underactive (or overactive) thyroid.

Of course we should be testing regularly for people who happen to be on amiodarone or lithium, both of which are known to interfere with thyroid function. An interesting phenomenon of the effect of amiodarone-induced thyroid dysfunction is that the effect may range from abnormal results on thyroid function studies without overt dysfunction to symptomatic thyrotoxicosis or hypothyroidism (Porsche and Brenner, 2006).

So it is important to think about thyroid disease and check thyroid function tests and thyroid auto-antibodies in people with type 1 diabetes and in those with type 2 diabetes when there is a clinical suspicion. The following article by Nosheen Iqbal and Simon Page gives more depth to this subject. ■



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