

Abstract

Subclinical hypothyroidism (SCH) is defined as a raised serum thyroid stimulating hormone level with normal thyroxine. Despite a prevalence of up to 9% of the adult population there is widespread uncertainty on how to manage it. The aim of this study was to assess how older adults with SCH are managed in primary care. A retrospective case-note review was carried out on patients attending Mallow Primary Healthcare Centre. This study identified patients 65 years and over meeting the criteria for SCH in one year. The prevalence of SCH in this study was calculated as 2.9%. 22.2% of patients were treated with thyroxine. 6.1% of untreated patients progressed to clinical hypothyroidism within the study period while 18.2% spontaneously reverted to normal TSH levels.

Introduction

Subclinical hypothyroidism (SCH) is a common biochemical abnormality detected in primary care¹. There has been a lot of controversy regarding the clinical significance of SCH. While studies have been inconsistent, it appears SCH may adversely affect cardiovascular risk factors, particularly lipid levels¹, as well as cognitive and psychiatric function^{2,3}. To date there is significant uncertainty regarding the need for thyroxine replacement. A 2009 Cochrane review failed to offer clarity on the matter, recommending that clinical judgment and patient preference guide decision making until further research is completed⁴. The objective of this study was to investigate how it is currently managed in an Irish primary care setting.

Methods

This study was a retrospective case note review on older general practice patients meeting the criteria for subclinical hypothyroidism diagnosis in a one year period. The study was carried out in Mallow Primary Healthcare Centre (MPHC), which incorporates three separate GP clinics. Participants were adults aged 65 years or over. Inclusion criteria were age greater than 65 years and one thyroid function test (TFT) meeting the criteria for SCH diagnosis in the study period. SCH is defined in this study as a TSH of greater than 4.6mIU/L, with a T4 within normal limits. Exclusion criteria were previous diagnosis of clinical hypothyroidism, incomplete files and death during the study period. The initial search yielded 174 patients. 75 patients were excluded, leaving a total of 99 patients in the study. Of these 75 patients, 66 were excluded as they had a prior diagnosis of overt hypothyroidism, 8 patients had incomplete notes and 1 patient had passed away. All data was analysed using SPSS Version 20.

Results

A total of 99 patients over the age of 65 were identified as having SCH, giving a prevalence among those tested of 2.8%. The majority of TFTs performed were carried out as part of a routine check up (66%). A smaller percentage (28%) were being followed up as they had a history of abnormal TFTs. In 6% of cases the GP specifically requested the thyroid function test because of symptoms reported by the patient. Table 1 outlines how SCH was managed in the three clinics. In total 22.2% of patients with SCH were treated with thyroxine, with a mean starting dose of 41.6mcg (SD 24.4). The mean TSH which prompted treatment was 6.4mIU/L (SD 1.2). Of those who did not receive treatment 18.2% reverted spontaneously to normal TSH levels while 6.1% progressed to clinical hypothyroidism.

Table 1: Management/outcome of SCH

	Clinic 1 n=32	Clinic 2 n=24	Clinic 3 n=43	Total n=99
Treated with thyroxine, number (%)	6 (18.8)	10 (41.7)	6 (14.0)	22 (22.2)
No action, number (%)	14 (43.8)	9 (37.5)	30 (69.8)	53 (53.5)
≥2 elevated TSH tests	11 (34.4)	5 (20.8)	12 (27.9)	28 (28.3)
1 elevated TSH test	3 (9.4)	4 (16.7)	18 (41.9)	25 (25.3)
Reverted spontaneously to normal TSH, number (%)	9 (28.2)	4 (16.7)	5 (11.6)	18 (18.2)
Progressed to overt hypothyroidism, number (%)	3 (9.4)	1 (4.2)	2 (4.7)	6 (6.1)

Discussion

This retrospective study characterises primary care patients with subclinical hypothyroidism. The prevalence of SCH in the study sample was calculated as 2.8%, compared to a national prevalence of 2.3% in the same age group⁵. There was a slight predominance of females as would be expected, given that SCH is more common among older women than men¹. The mean TSH level was 5.1mIU/L. This is in line with previous research which has suggested that up to 90% of patients with SCH have TSH readings of less than 10mIU/L⁶. The mean TSH level that prompted treatment was 6.4mIU/L. This is in contrast to many of the recommendations for management which state that treatment should be reserved for those with a TSH of greater than 10mIU/L^{7,8}. Several studies in the past have assessed the natural course of SCH. In this study it was found that 6.1% of patients progressed to clinical hypothyroidism within one year. This is higher than the figure quoted in the literature of 2-3%⁹. In contrast to this,

18.2% of untreated patients spontaneously reverted to normal TSH levels during the one year period. Again this is a higher figure than quoted in the literature of 5.5%¹⁰.

In summary, subclinical hypothyroidism is a prevalent condition among older adults in the community. It is often identified by general practitioners on routine check-up. It can be associated with non-specific symptoms of thyroid dysfunction. Approach to management varies with 22% of patients treated with thyroxine. Definitive guidelines on treatment would help simplify management of this common condition.

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