Men with hyperthyroidism or hypothyroidism commonly have erectile dysfunction that often spontaneously improves after restoration to euthyroidism

Krassas GE, Tziomalos K, Papadopoulou F, Pontikides N, Perros P. Erectile dysfunction in patients with hyper- and hypothyroidism: how common and should we treat? J Clin Endocrinol Metab 2008;93:1815-9.

SUMMARY

BACKGROUND Erectile dysfunction (ED) is a common disability associated with aging and numerous diseases. Symptoms of ED for 3 months are usually required to establish the diagnosis. The aim of this study was to investigate the impact of hyperthyroidism and hypothyroidism on the health of male sexual function and dysfunction by using the Sexual Health Inventory for Males (SHIM) instrument (5), which is a validated and widely used five-item questionnaire concerning a man's ability to attain and maintain an erection.

METHODS The SHIM questionnaire was administered to 76 consecutive men with hyperthyroidism or hypothyroidism seen in the thyroid clinic in Panagia General Hospital in Thessaloniki, Greece. Five patients did not wish to participate, leaving 71 study subjects to complete the questionnaire. Controls were age-matched healthy normal men. Individuals who had diabetes mellitus or cardiovascular or urologic disease were excluded. None of the patients were taking thyroid hormone or antithyroid drugs at the time the questionnaire was administered, but about one third of the patients and controls were taking other medications, mainly ß-blockers, statins, diuretics, hypertensive agents, and mild sedatives. The diagnosis of hyperthyroidism was based on elevated serum free thyroxine (FT_4) and suppressed serum thyrotropin (TSH) levels, and the diagnosis of hypothyroidism was based on increased serum TSH and decreased FT_4 levels. Also measured were prolactin, antithyroid peroxidase antibodies (TPOAbs), antithyroglobulin antibodies (TgAbs), and free testosterone. ED was judged as mild if the responses to SHIM questions 1 to 5 added to a score between 17 and 21, as moderate if the score was between 11 and 16, and as severe if it was 10 or less. After the questionnaire was completed, patients were treated with either antithyroid drugs or levothyroxine ($L\text{-}T_4$).

RESULTS The study included 71 subjects, 27 with hyperthyroidism and 44 with hypothyroidism, and 71 euthyroid controls. The mean (±SD) age was 52.6±13.7 years for the hyperthyroid group, 55.9±15.3 for the hypothyroid group, and 54±15.2 for the control group. Fifty-six (79%) men with thyroid dysfunction had a SHIM score ≤21, indicating some degree of ED, 37 (52.1%) with hypothyroidism and 19 (26.8%) with hyperthyroidism, compared with 24 controls (33.8%) with a similar ED score (P<0.0001) (Figure 1). Severe ED (SHIM ≤10) was found in 21 patients (37.5%), 13 (29.5%) with hypothyroidism and 8 (29.6%) with hyperthyroidism, as compared with 6 controls (25%) (Figure 1). ED was found in a significantly larger number of patients with hyperthyroidism (71%) and hypothyroidism (85%) as compared with controls (25%) (P<0.001 for both) (Figure 1). SHIM scores in the

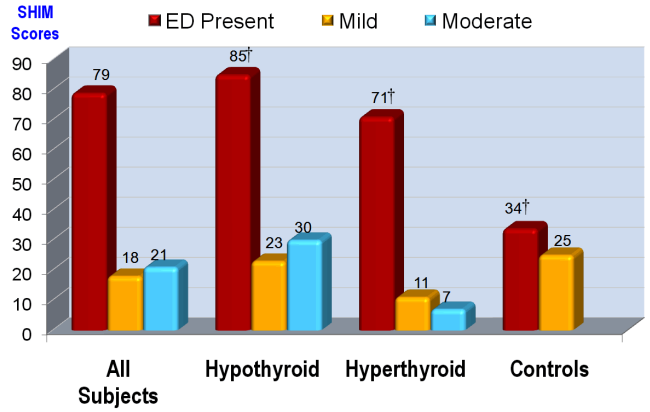

Figure 1. The mean ED scores are shown for all subjects and those with hypothyroidism or hyperthyroidism, and controls. A SHIM score of 17 to 21 is mild ED, a score of 1–16 is moderate ED, and a score of ≤10 is severe ED. Percentages here and elsewhere in the figures are rounded to nearest integer. †P<0.001 for the comparison between baseline SHIM scores in patients and controls. This and other figures are drawn from the data of Krassas et al.

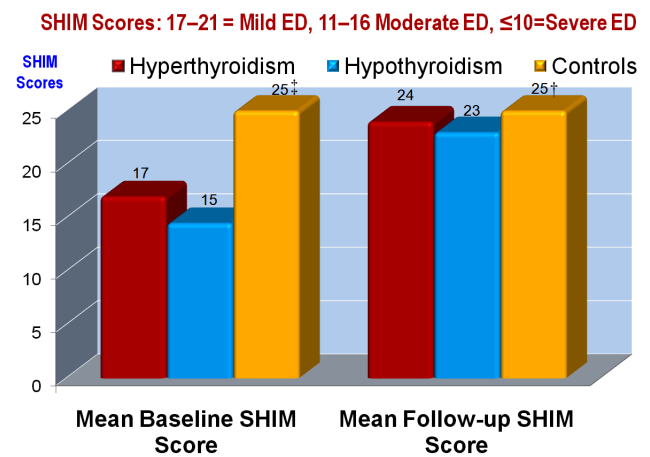

Figure 2. The SHIM scores are shown for patients and controls at baseline and after treatment of thyroid dysfunction. †P<0.001 for the comparison between baseline SHIM scores in patients and controls. ‡P<0.001 for the comparison between baseline and follow-up SHIM scores.

patients with hypothyroidism correlated positively with FT_4 ($P = 0.05$) and negatively with TSH levels ($P<0.001$) but this was not found in patients with hyperthyroidism. After treatment of thyroid dysfunction, SHIM scores increased significantly in patients with hypothyroidism and those with hyperthyroidism ($P<0.001$ for both) (Figures 2 and 3). After follow-up for 1 year there was no difference in SHIM scores in patients treated for thyroid dysfunction (Figures 2 and 3).

CONCLUSION Men with thyroid dysfunction commonly have ED that is reversible with restoration of the euthyroid state. Although screening for ED is recommended for these men, specific treatment should be postponed for at least 6 months after restoring euthyroidism because it may take this long for ED to spontaneously resolve.

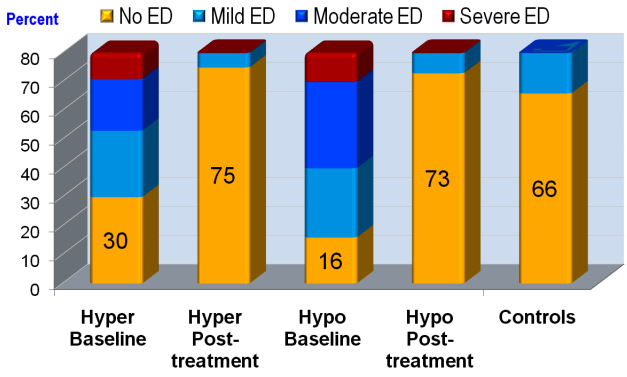

Figure 3. After treatment, the percentage of patients with ED is significantly improved and is in the range of normal controls. Hyper denotes hyperthyroidism and Hypo hypothyroidism.

COMMENTARY

As assessed by the international SHIM instrument, approximately 80% of the patients in this study had ED, as compared with 37.5% of the controls. After euthyroidism was restored, 30% of the patients had ED, a rate similar to that in controls. This study hinges on the test used to assess ED. What is the SHIM test, and how accurate is it? The test is a simple five-step questionnaire that has been widely used as an instrument to evaluate male erectile function (1–3). The self-administered test asks questions about a man's ability to achieve and maintain an erection and satisfaction with attempted intercourse, scoring the response on a Likert scale of 1 (strongly agree) to 5 (strongly disagree). A SHIM score of 21 or less suggests that a man has ED. This and similar tests have been widely used since medications to treat ED became available (1–3). A 2008 review by Derogatis (4) points out that the recent recognition of the high prevalence of sexual dysfunctions and disorders in our society, along with the development of drugs to treat ED, has resulted in a significant expansion in the development of valid and reliable measures of sexual function/dysfunction. He explains that the instruments generally are brief self-report inventories, typically requiring 10 to 20 minutes of patient time for completion. All of these instruments, which must adhere to recently prescribed rigorous guidelines set forth by the Food and Drug Administration, have been demonstrated to be valid and reliable indicators of the status and quality of sexual functioning in both men and women. Moreover, these self-reported questionnaires are generally used alone in assessing erectile function without using confirmatory objective tests of erectile function. This study makes it clear that men with thyroid dysfunction should be considered for ED evaluation (5). It also must be appreciated that therapy for thyroid dysfunction alone may be enough to treat the ED, and that more aggressive diagnostic testing and therapy should be postponed for at least 6 months after restoring euthyroidism because ED may resolve spontaneously over time.

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References

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5. The SHIM test is avaialable at: http://www.erectilefunction.org/tool_kit/Shim.pdf