

# Association between fibromyalgia and thyroid autoimmunity

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## Objectives:

Fibromyalgia is a disorder that characterized by fatigue, generalized body pain and cognitive symptoms, and the aetiology has not been clearly described.

Because similar symptoms are frequently found in Hashimoto's thyroiditis and there is not an optimal response to the treatment of hypothyroidism, the aim of this study is to determine the prevalence of fibromyalgia in patients with Hashimoto's thyroiditis, to explain the symptoms and to select the appropriate treatment.

## Methods:

This cross-sectional study used the 'case study' method and included 100 euthyroid patients with Hashimoto's thyroiditis that were referred to the rheumatology clinic of Imam Khomeini hospital in 1392. Patients who met the inclusion criteria underwent a physical examination according to ACR 2010 criteria for fibromyalgia . Data collection and analysis was performed using SPSS 22 software.

**Table 1.** Baseline characteristics of euthyroid Hashimoto thyroiditis patients

Age	38.5 ± 11.9
Sex (female, %)	95, 93.1
Education (years)	11.5 ± 4.2
Marital status (married, %)	90, 88.2
Menopause status <sup>b</sup> (menopause, %)	18, 18.9
Duration of thyroid disease <sup>a</sup> (months)	36 (14-99)
Anti-TPO (IU/ml)	364.1 ± 37.7
TSH (mIU/l)	2.53 ± 1.37
Abbreviations: TPO, thyroid peroxidase; TSH, thyroid-stimulating hormone	
<sup>a</sup> Presented as median (interquartile range)	
<sup>b</sup> The denominator is the total number of females (n=95)	

**Table 2.** Case by case description of patients with fibromyalgia

	Age (years)	Sex	Duration of thyroid disease (months)	Anti-TPO (IU/ml)	TSH (mIU/l)	WPI <sup>a</sup>	Somatic symptoms <sup>b</sup>				SS score
							Fatigue	Waking unrefreshed	Cognitive symptoms	Somatic symptoms	
1	36	F	5	169	2.23	8	2	1	1	1	5
2	38	F	120	297	2.84	6	3	2	2	2	9
3	51	F	12	148	2.20	13	3	2	1	1	7
4	52	F	120	310	1.60	7	1	2	1	1	5
5	57	F	444	425	3.80	7	1	1	2	2	6

Abbreviations: TPO, thyroid peroxidase; TSH, thyroid-stimulating hormone; WPI, wide-spread pain index; SS, symptoms severity

<sup>a</sup> Describes the number of painful areas in the past week. Nineteen areas (from jaw to lower leg) are reviewed and hence WPI can range between 0 and 19.

<sup>b</sup> Each of the three somatic symptoms is scored from 0 (no problem) to 3 (severe, life-disturbing problems) which describes the severity of each complaint over the past week. A fourth indicator (somatic symptoms) is then scored from 0 (no symptoms) to 3 (a great deal of symptoms) to present a semi-quantitative index of the number of somatic symptoms. The Four indicators are then summed to calculate a single score (SS) which is indicative of the extent of the somatic symptoms a patient is having and can range between 0 and 12. A diagnosis of fibromyalgia can be made if WPI≥7 and SS≥5 or WPI 3-6 and SS≥9.

## Results:

The mean age of the patients was 38.7 ± 11.58 years, and 7% of patients were male. The prevalence of fibromyalgia was 5%. No significant correlation was found between fibromyalgia patients and other variables such as age, gender, marital status, menopause, education, duration of Hashimoto's thyroiditis, Anti-TPO and TSH levels, and also no correlation was found between the severity of fibromyalgia and these variables.

## Conclusions:

The prevalence of fibromyalgia was not higher than the normal population; thus, musculoskeletal symptoms could not be justified only with fibromyalgia. According to the low number of samples and lack of information on the prevalence of the disease in Iran, further studies using a larger population are recommended.

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