

Prevalence of subclinical hypothyroidism in postmenopause and its relationship with muscle/joint pain: a study in Colombian women

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The prevalence of subclinical hypothyroidism (elevated TSH with normal T4 levels) increases after menopause. Although subclinical hypothyroidism has been associated with increased morbidity in adult women, few studies have evaluated its relationship with common postmenopausal symptoms such as muscle and joint pain (MJP).

Objective

To determine the association between subclinical hypothyroidism with MJP and with severe MJP

in postmenopausal women living in Colombia.

Methodology

Cross-sectional study conducted as part of the research project 'Thyroid and Women', approved by the Ethics Committee of the University of Cartagena, Colombia.

The sample size was calculated with data from the 2022 projection of the 2005 Colombian Population Census.

Postmenopausal women (≥ 1 year without menstruation) were recruited in 2023.

Participants completed a questionnaire and provided a venous blood sample for measurement of TSH and T4 after providing informed consent. Subclinical hypothyroidism was defined as TSH > 4.5 $\mu\text{U/mL}$ with normal T4 levels (0.8–1.8 ng/dL).

Muscle and joint pain and severe muscle and joint pain were assessed using item 11 of the Menopause Rating Scale (MRS), defined as scores > 1 and ≥ 3 , respectively.

Two adjusted logistic regression models were performed. First, MJP (dependent variable), subclinical hypothyroidism (independent variable). Second, severe MJP (dependent variable) and the same independent variable.

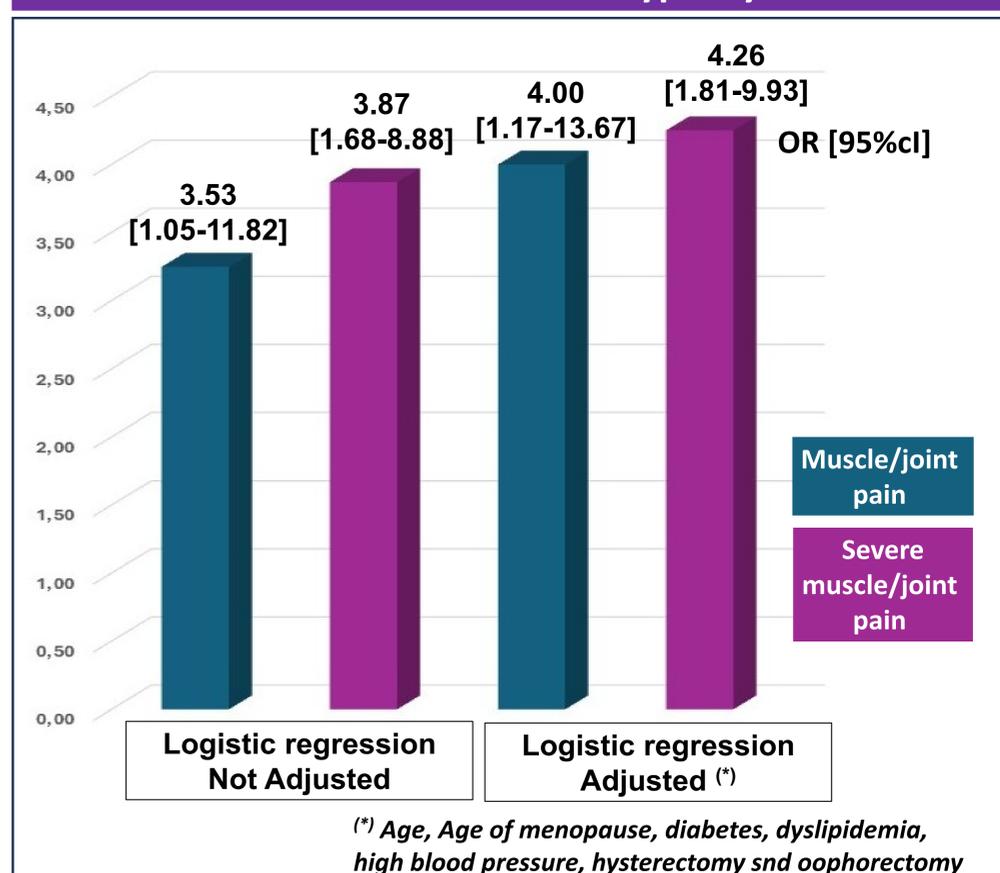
Both models were adjusted for age, age of menopause, diabetes, dyslipidemia, high blood pressure, hysterectomy, and oophorectomy.

643 postmenopausal women were included in the study

	Muscle/joint pain			Severe muscle/joint pain		
	With n=462 (71.8)	Without n=181 (28.2)	p	With n=269 (41.8)	Without n=374 (58.2)	p
Age	54.7 \pm 5.1	55.3 \pm 5.4	0.18	55.2 \pm 7.0	55.1 \pm 5.5	0.91
Time since menopause	8.1 \pm 6.4	8.2 \pm 6.2	0.81	9.6 \pm 6.1	8.1 \pm 6.3	0.26
TSH	2.1 \pm 2.4	1.9 \pm 1.2	0.25	3.6 \pm 5.4	1.9 \pm 1.4	0.62
Subclinical hypothyroidism	26 (5.6)	3 (1.6)	< 0.05	21 (7.8)	8 (2.1)	< 0.001
Diabetes	53 (11.4)	16 (8.8)	0.33	32 (11.9)	37 (9.8)	0.41
Hypertension	139 (30.0)	52 (28.7)	0.73	82 (30.4)	109 (29.1)	0.71

Data are presented in means with standard deviation or in absolute values (%)

Association with subclinical hypothyroidism



Conclusion

In a group of postmenopausal women living in Colombia, subclinical hypothyroidism was associated four times with muscle/joint pain and with severe muscle/joint pain.