



Original Contribution

ASSESSMENT OF HEALTH RELATED QUALITY OF LIFE IN PATIENTS WITH THYROID DISEASES

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ABSTRACT

We analyzed data from the EQ-5D questionnaire to assess health related quality of life in patients with thyroid diseases. Response data on 26 patients (16 patients with nodular goiter, 10 patients with autoimmune thyroid diseases) and 11 healthy controls are summarized.

Results: We found a moderate statistical dependence between the three investigated groups and the presence of pain ($\chi^2 = 7.739$; $p = 0.045$; Cramer's $V = 0.337$). We found a statistically significant difference between the three groups (patients with nodular formations, patients with thyroid autoimmune diseases and controls) and the index of health status. There was a statistically significant lower mean index of health status in patients with autoimmune thyroid diseases (58) compared to healthy controls (80).

In conclusion, evaluation the quality of life in patients with thyroid disorders by the use of the questionnaire EQ-5D for showed the presence of differences in both in patients with nodular goiter and in those with autoimmune thyroid diseases compared to controls. It is necessary to introduce in clinical practice specific and more detailed questionnaires to assess quality of life in patients with thyroid diseases and the effect of ongoing treatment.

Key words: autoimmune thyroid disease, nodular thyroid disease, health related quality of life (HRQoL), EQ-5D questionnaire

INTRODUCTION

Thyroid disorder is one of the leading endocrine diseases. It represents around 30% to 40% of the patients seen in an endocrine practice (1).

The severity of autoimmune thyroid diseases varies among the patients. Raised serum concentrations of thyroid antibodies correlate with the presence of focal thyroiditis in thyroid tissue obtained by biopsy and at autopsy from patients with no evidence of hypothyroidism during life. Early post-mortem studies confirmed histological evidence of chronic autoimmune thyroiditis in 27% of adult women, with a rise in frequency over 50 years, and 7% of adult men, and diffuse changes in 5% of women and 1% of men (2).

In surveys of unselected subjects using ultrasonography, 20 to 76 percent of women had at least one thyroid nodule (3,4). In Bulgarian study nodules were found in 32.1% of the females and 15.7% of the males (5). In Germany, an area of relative iodine deficiency, 96 278 screening ultrasounds found thyroid nodules or goiter in 33 percent of men and 32 percent of women; nodules over 1 cm were found in 11.9 percent of the population (6).

Thyroid diseases affect the health related quality of life (HRQoL) of patients, but still are controversial opinions of researchers, whether these disturbances are only related to changes in the functional state of the thyroid, or autoimmunity and nodular diseases also have negative impact.

This prospective study aimed to evaluate the HRQoL in patients with thyroid diseases with the EQ-5D questionnaire.

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MATERIAL AND METHODS

We evaluated response data on 26 patients (21 women and 5 men) from Department of Endocrinology and Metabolic diseases, University Hospital, Stara Zagora, Bulgaria and 11 healthy controls. The average age of the patients was 50.2 ± 16.9 years and that of the controls (11 women) was 46 ± 7.4 years. The group of patients was divided according to the type of the disease - 16 patients with nodular goiter and 10 patients with autoimmune thyroid diseases in euthyroid state. The median age of patients with nodular formations was 49.3 ± 14.6 years (range 30-74 years) and the group with autoimmune thyroid diseases - 51.7 ± 20.7 years (range 22-82 years).

The EuroQoL Quality of Life Scale EQ-5D is a measure of self-reported health outcomes that is applicable to a wide range of health conditions and treatments (7,8). It consists of two parts: a descriptive system (Part I) and a visual analogue scale (VAS) (Part II). Part I of the scale consists of 5 single-item dimensions including: mobility, self care, usual activities, pain/discomfort, and anxiety/depression. Each dimension has a 3 point response scale designed to indicate the level of the problem: 1 = no problems; 2 = some problems; 3 = extreme problems. Part II uses a vertical

graduated VAS (thermometer) to measure health status, ranging from worst imaginable health state (0) to best imaginable health state (100). The score from Part II can be used to track changes in health, on an individual or group level, over time (9).

We used a validated Bulgarian version.

Statistical analysis

The quantitative data were normally distributed and were presented as means and standard deviations. Normality was assessed by the Shapiro-Wilk test. Numeric data were compared by ANOVA. For multiple comparisons were used Tukey HSD post-hoc test. The categorical data were presented as proportions and 95% confidence intervals, and were analyzed by Fisher's exact test. Data were analyzed with a statistical package SPSS v.13. Statistical significance was accepted at $p < 0.05$.

RESULTS AND DISCUSSION

Differences of 5 dimensions of part I of EQ-5D including mobility, self care, usual activities, pain/discomfort, and anxiety/depression in three groups (patients with nodular formations, patients with thyroid autoimmune diseases and controls) are present in **Table 1**.

Table 1. Stratification of the dimensions of EQ-5D

Groups	levels	mobility		self care		usual activities		pain/discomfort		anxiety/depression	
		n	% ± Sp	n	% ± Sp	n	% ± Sp	n	% ± Sp	n	% ± Sp
nodular	point 1	9	56 ± 12.4	15	94 ± 5.9	11	69 ± 11.6	6	38 ± 12.1	4	25 ± 10.8
thyroid	point 2	7	44 ± 12.4	1	6 ± 5.9	5	31 ± 11.6	10	62 ± 12.1	11	69 ± 11.6
disease	point 3	0	0 ± -	0	0 ± -	0	0 ± -	0	0 ± -	1	6 ± 5.9
autoimmune	point 1	5	50 ± 15.8	9	90 ± 9.5	7	70 ± 14.5	2	20 ± 12.6	1	10 ± 9.5
thyroid	point 2	5	50 ± 15.8	1	10 ± 9.5	3	30 ± 14.5	7	70 ± 14.5	7	70 ± 14.5
disease	point 3	0	0 ± -	0	0 ± -	0	0 ± -	1	10 ± 9.5	2	20 ± 12.6
controls	point 1	10	91 ± 8.6	10	91 ± 8.6	10	91 ± 8.6	8	73 ± 13.4	5	46 ± 15
	point 2	1	9 ± 8.6	1	9 ± 8.6	1	9 ± 8.6	3	27 ± 13.4	6	55 ± 15
	point 3	0	0 ± -	0	0 ± -	0	0 ± -	0	0 ± -	0	0 ± -

We found a moderate statistical dependence between the three investigated groups and the presence of pain/discomfort ($\chi^2 = 7.739$; $p = 0.045$; Cramer's V = 0.337). Most patients with autoimmune thyroid diseases

experienced extreme (10%) and moderate (70%) pain/discomfort compared to controls (**Figure 1**).

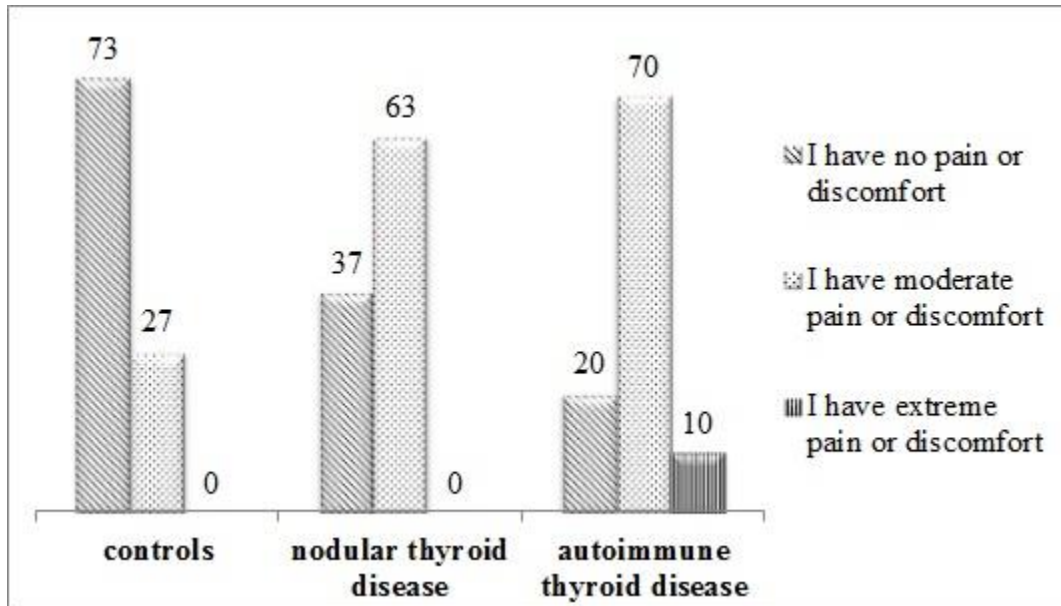


Figure 1. Distribution of the groups of patients and controls according to the symptom pain/discomfort (%)

We found a statistically significant difference between the three groups (patients with nodular formations, patients with thyroid autoimmune diseases and controls) and the index of health status (ANOVA test). Post-hoc

analysis demonstrate a statistically significant lower ($F=3.368$; $p=0.046$) mean index of health status in patients with autoimmune thyroid diseases (58 ± 23.6) compared to healthy controls (80 ± 17.3) (Figure 2).

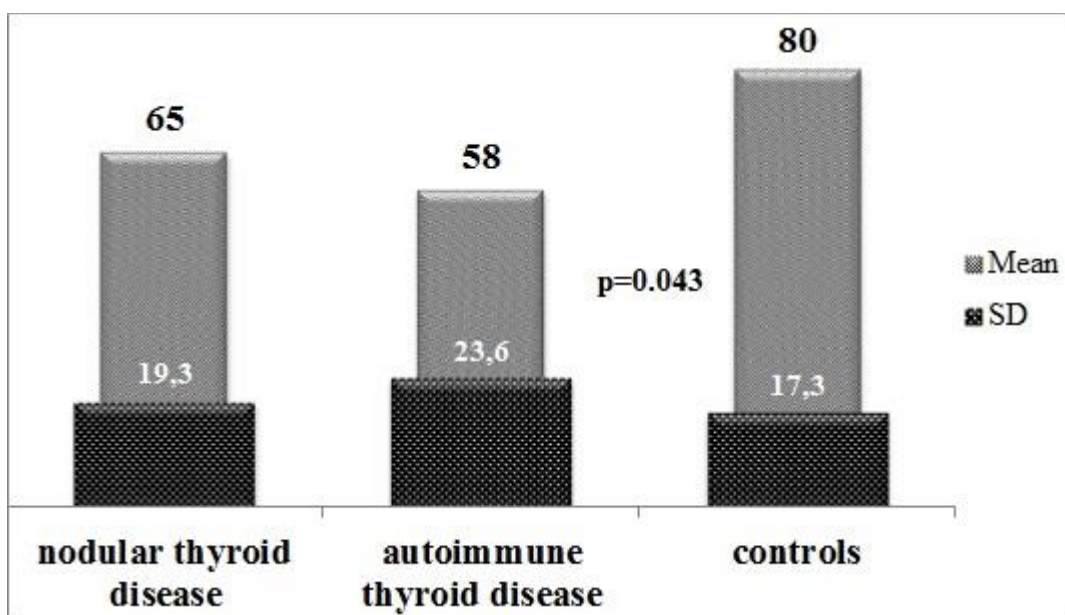


Figure 2. Average value for index of health status in patients and controls

Our results demonstrate that patients with autoimmune thyroid diseases in euthyroid state have a statistically evidence of decreased quality of life. This finding means that hypothyroidism or hyperthyroidism, only were a contributing factor to the development and the presence of associated symptoms of disease. Our data are in concordance with study of Ott et al.(10). They found that increased anti-TPO levels were associated with a lower quality of life and various general symptoms as chronic fatigue, dry hair, chronic

irritability, chronic nervousness in Hashimoto's thyroiditis patients.

In patients with nodular thyroid disease the quality of life was also lower in comparison to healthy controls, concerning the sensation of moderate pain/discomfort.

The limitation of our study is the small number of patients and controls included, but our data clearly demonstrate the negative impact of thyroid disease in quality of life in patients.

CONCLUSION

Evaluation the quality of life in patients with thyroid disorders by the use of the questionnaire EQ-5D for showed the presence of differences in both in patients with nodular goiter and in those with autoimmune thyroid diseases compared to controls.

It is necessary to introduce in clinical practice specific and more detailed questionnaires to assess quality of life in patients with thyroid diseases and the effect of ongoing treatment.

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