

Effects of acupuncture in the treatment of hypothyroidism and hyperthyroidism

Blagica Arsovska ^{1,2}

1 Center of Traditional Chinese Medicine "Tong Da Tang", Republic of N. Macedonia;

2 University of Skopje, Skopje, Republic of N. Macedonia

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Abstract:

Acupuncture can help regulate the immune system, bringing the immune response back into balance. The paper presents acupuncture treatment methods and drug treatment and compares the effectiveness and impact of these therapies in the treatment of hypothyroidism and hyperthyroidism in patients. The treated patients were divided into five groups, and then an analysis was made of the patient data, which treatment gave better results, which gender and which age group was more prevalent, which age group and gender showed better results, which drugs were used, which acupuncture points were used, duration of treatments, duration of the disease, differentiation of symptoms, presence of Hashimoto's syndrome, presence of strumanodosis and other parameters. Based on the results obtained, it can be concluded that acupuncture treatment is more effective and more commonly used in the treatment of hypothyroidism and hyperthyroidism. Acupuncture treatments work faster and are more effective at normalizing thyroid hormone levels. Just as Louis Pasteur said, "Science knows no borders, because knowledge belongs to mankind and is the torch that illuminates the world." The same is true for TCM. It is not only a knowledge system, but also a great way of thinking. Serve humanity and modern medical science more effectively. I strongly hope that in the near future, more young doctors and scientists will correctly master TCM knowledge, develop new ways of thinking in medical research, and demonstrate better clinical results.

Keywords: hyperthyroidism, hypothyroidism, Traditional Chinese Medicine, acupuncture

Introduction

The thyroid gland arises from the mucous membrane of the throat in the fourth week of embryonic life. The gland enlarges during menstruation and pregnancy. The thyroid gland weighs about 30 grams and is richly vascularized with a blood flow of 80 to 120

milliliters per minute. Follicular cells (thyrocytes) secrete the two hormones that are derivatives of the amino acid tyrosine:

1. T4 – Thyroxine which contains 4 atoms of iodine
2. T3 – Triiodothyronine which contains three atoms of iodine

T3 and T4 are known as thyroid hormones. A necessary element for the synthesis of these hormones is the iodine.

The thyroid gland is an organ well supplied with blood by the superior and inferior thyroid arteries, and sometimes by some afferent thyroid arteries. The thyroid gland is the only endocrine gland that stores its secretory product in a larger quantity, so normally the thyroid gland stores about a hundred days' supply of thyroid hormones. In fact, under the stimulation of TSH, T3 and T4 are synthesized by incorporating iodine atoms into the amino acid tyrosine, then stored for a certain period of time and finally secreted into the blood. [1]

In Traditional Chinese Medicine, treatment involves long-term treatment with acupuncture and herbal medicines. In the treatment of hypothyroidism, acupuncture can be used to regulate energy levels, balance emotions, restore hormonal balance, help with insomnia and coping with menstrual problems and emotions. Hypothyroidism is a condition that occurs due to stagnation of Qi, deficiency of Yang, accumulation of external pathogenic factors - wind and moisture, or a combination of pathologies. Also, two Yang organs are involved - the spleen and kidneys. According to Traditional Chinese Medicine, there are three types of hypothyroidism: Qi deficiency in the spleen and kidneys, Yang deficiency in the heart and kidneys, and Yin deficiency in the kidneys. [2] [3]

Acupuncture stimulates the nervous system and causes the release of neurochemical molecules. The resulting biochemical changes affect the body's homeostatic mechanisms, thereby promoting physical and emotional well-being. Doctors look for the root of disease within the pattern of imbalance and hypothyroidism can be described as a condition of Yin and Yang deficiency in the kidneys. When the needles are inserted into specific acupuncture points, the Yin energy in the liver and kidneys is strengthened, heat is cleared and the Yang energy in the kidneys is revived. In addition to acupuncture treatment, many practitioners of Traditional Chinese Medicine use tea formulas for hypothyroidism. Teas are used to treat the Yang energy of the Spleen and Kidneys, support the Spleen, warm the Kidneys, and regulate Qi and Blood. Traditional Chinese Medicine (TCM) treats the human body holistically, taking into account the unity of body and spirit and their relationship to the environment. For Chinese Medicine, a symptom or disease is a sign of imbalance that affects the whole body and indicates that other aspects of the patient's life should be evaluated, not just the obvious organ or system affected. TCM for the treatment of autoimmune thyroiditis has a long history and names

and is also called "bile disease", yingbing. Patients with "bile disease" can become easily angry and worry too much. Also, the disharmony between Yin and Yang leads to the emergence of nodules, edemas and stagnation caused by phlegm. Autoimmune diseases need long-term treatment strategies. This disease should be directed outward, away from the Yin interior and toward the Yang exterior, to prevent the disease from entering the blood, body fluids, or visceral organs. According to TCM, diseases have "exit routes" through the Yang channels and their associated exits (colon, for example), and most treatment strategies are designed to take advantage of these exit routes, since diseases cannot directly exit from the inside, from the blood or body fluids. [2]

Traditional Chinese Medicine (TCM) provides many more natural and safe options for hyperthyroidism treatments, including acupuncture and herbal treatment. According to TCM, the condition can occur due to a lack of Qi energy and a lack of Yin, an excessive factor Heat in the liver, stagnation due to phlegm or energy deficiency in the heart, kidneys and liver. Western medicine considers stress to be one of the possible causes of hyperthyroidism, and from a TCM point of view, stress causes an imbalance in the liver. The liver can be blocked in many ways: by the accumulation of phlegm that blocks the throat and causes goiter, anger or using too many spices that make the liver too hot and heat rises, etc. Acupuncture treatment not only treats the thyroid gland, but the whole body, promoting health, improving the flow of energy throughout the body, strengthening the immune system and removing all blockages in the meridians and collaterals. Hyperthyroidism can be effectively treated with acupuncture with a good physical examination, discovering and identifying the root of the condition where it originated, and treating the specific organs that are affected. It is not only the thyroid gland that is treated, but the whole body, and therefore taking the symptoms as the departure point, it is important to find which organs are affected, so that the function of the thyroid gland can be effectively rebalanced. Although the thyroid gland is located in the neck, it affects the entire body. There are 8 meridians (San Jiao, Liver, Kidney, Bladder, Gallbladder, Spleen, Stomach and Small Intestine) that are related to the thyroid gland and if there is any deficiency in any of these meridians, it can also affect the rest of the body. According to TCM theory, the main three affected organs in hyperthyroidism are: the heart, liver and kidneys, and the root of the disease is a lack of energy in these organs. Also, the condition can be caused by stagnation of phlegm and deficiency of Qi and deficiency of Yin. Fire in the liver contributes to overactive thyroid hormones, phlegm contributes to an enlarged gland, and a lack of Qi and Yin contributes to fatigue and weakness. Based on this theory, the goal of the treatment is to balance Qi energy and Yin, clear heat from the organs, remove symptoms and treat the root of the disease. Herbal treatment can be used in combination with acupuncture treatment. When fire (heat) is present in the liver, the herbal formula that can be used is Zhi Zi Qing Gan Tang to cleanse the liver and cleanse the fire. If there is Qi and Yin deficiency, the herbal formula used in the treatment is Yi Guan Jian to tonify Qi and Yin, calm the heart and

release the liver. In the case of Qi stagnation caused by phlegm (stagnation), Chai Hu Shu Gan Tang and Ban Xia Hou Po Tang are used to regulate the circulation of Qi energy, remove phlegm and calm the liver. In the case of Yin deficiency in the liver, kidney, and heart, Tian Wang Bu Xin Dan and Zhi Bai Di Huang Wan are used to tonify the heart. Where there is liver fire and phlegm and other additional Qi and Yin deficiencies, Imperial Formula for Hyperthyroidism is used. [4] [5]

Material and methods

The object of research are five groups of patients who were treated with acupuncture at the Center for Traditional Chinese Medicine and Acupuncture in Skopje and with medicinal drugs prescribed by doctors specializing in endocrinology in Skopje. The groups are shown in Table 1.

Table 1. Groups of patients which are subject of research

- Group 1 Patients with hypothyroidism treated with acupuncture only
- Group 2 Patients with hypothyroidism treated with acupuncture and drug therap
- Group 3 Patients with hyperthyroidism treated with acupuncture only
- Group 4 Patients with hyperthyroidism who were treated with acupuncture and received drug treatment.
- Group 5 Control Group of patients with normal thyroid function

The objectives of this research are: to show the differences between treatments of hypothyroidism and hyperthyroidism with acupuncture and combined acupuncture and drug treatment and to compare them with the results of the control group, to show the effects thereof, as well as to make a detailed analysis of the disease.

In order to achieve the objectives, it was necessary to carry out the following tasks:

- To select patients who meet the criteria for hypothyroidism,
- To select patients who meet the criteria for hyperthyroidism,
- To select patients who meet the criteria for a control group with normal thyroid function
- To include patients with the presence of Hashimoto's syndrome and struma nodosa,
- To take data about the disease from patients who are treated with acupuncture and drug treatment,
- To take data about the disease from patients who were treated only with acupuncture,
- To make an analysis of the data so as to ascertain which gender and age group are more represented, duration of the disease, types of symptoms and other parameters were obtained.

- To make a comparison of the treatments in the five groups based on which group has achieved better results, which group produced faster results and other parameters, and then show the results statistically in tables and graphs.
- To prove the effectiveness of acupuncture treatment.

By accomplishing the aforementioned tasks, the goal of assessing which treatment is more efficient and gives faster results in the treatment of hypothyroidism and hyperthyroidism was successfully attained.

The research included five groups of patients who were treated at the Center for Traditional Chinese Medicine and Acupuncture in Skopje and with drugs prescribed by doctors specializing in endocrinology from Skopje.

The treatment was conceived in such way as to include 200 treated patients from all groups, though to the criteria set allowed for the inclusion of only 70 patients. Children suffering from hormonal imbalance that occurs at their age, women in menopause and patients who have not yet completed the treatment or have given up on the treatment were not included among the patients analyzed.

70 patients, 62 women and 8 men, aged 24 to 62 years, diagnosed with hypothyroidism or hyperthyroidism, were included. Patients with struma nodosa, Hashimoto's syndrome, Graves' disease, etc. were also included in the treatment. Patients who exhibited a change of condition from hyperthyroidism to hypothyroidism and vice versa were also included.

An anamnesis was made and data were taken on the symptoms that appeared and caused the condition, blood pressure, previous illnesses, stool, urine, menstruation (in women), congenital disorders, physical injuries, blood sugar, appetite, weight loss, brittle nails, weight gain and other symptoms characteristic of hyperthyroidism and hypothyroidism.

Sterile acupuncture needles with dimensions of 0.25x25 mm produced by Wuijuiang City Medical & Health Material Co., LTD were used in the acupuncture treatments. Therapies are performed in a closed room at a temperature of about 25 degrees, for a duration of 35-40 minutes on both sides of the body.

Specific acupuncture points for hypothyroidism and hyperthyroidism are used in the treatment: DU20 (BaiHui), GB20 (FengChi), DU14 (DaZhui), ST9 (RenYing), LI4 (HeGu), BL15 (XinShu), BL20 (PiShu), BL23 (ShenShu), DU4 (MingMen), RN6 (QiHai), RN4 (QuanYuan), SP9 (YinLingQuan), ST36 (ZuSanLi), SP6 (SanYinJiao), KI3 (TaiXi) and LR2 (TaiChong). Specific Ashi ie. trigger points are located at anterior and posterior

borders on the neck.

All patients were treated with acupuncture by a doctor specialized in acupuncture at the same acupuncture points.

When patients were treated only with acupuncture, they did not use drugs and treatments other than acupuncture treatment.

Acupuncture and drug treatment include patients who receive drugs prescribed by a doctor specialized in endocrinology. Among the drugs that are included are hormonal drugs such as euthyrox, tirosea, thyroxine, levothyroxine, sodium warfarin, carbimazole, propranolol, bisoprolol and other similar drugs that are recommended for hypothyroidism and hyperthyroidism. Patients who are treated only with a certain hormonal drug from the group of drugs for hypothyroidism and hyperthyroidism are included.

The data and results obtained from both groups have been analyzed, statistically processed and presented in tables and graphs.

Results and discussion

Group 1

Group 1 are patients with hypothyroidism who were treated only with acupuncture. Table 6 shows patients diagnosed with hypothyroidism who are not taking hormone tablet treatment. A brief account is provided of hormone levels before and after the acupuncture treatment and the number of acupuncture therapies administered over a certain period.

Table 2. Patients with hypothyroidism treated only with acupuncture

Table 2 Reference values for patients 1, 2, 3, 4, 6, 7 and 8 according to ECLIA.

No.	Gender	Age	TSH before acupuncture	ft4 before acupuncture	ft3 before acupuncture	Number of acupuncture therapies	TSH following acupuncture	ft4 following acupuncture	ft3 following acupuncture	Comment
1	F	27	6,025	0,94		4	4,10	1,21		
2	F	29	5,91	1,21		6	3,90	1,43		
3	F	37	6,01	0,73		24	3,52	4,10		Therapies are administered irregularly, the patient is from abroad
4	M	42	4,45	1,10		2	3,81	1,15		Consumes large quantities of sea food
5	F	40	0.571	14.4	5.60	10	1.10	15.82	5.01	Anti TPO before treatment less than 10, IgE after treatment 113.1.St. Post thyrotoxicosis
6	F	24	3,73	0.895		20	3.52	1.23		Acne vulgaris
7	F	35	2.643	0.87		5	3.231	0.99		
8	M	43	1.41	0.93		11	1.965	0.89		Anti TPO - 262 Anti TPO - 112
9	F	30	9.79	10.1		8	4.54	11.5		
10	F	30	4.98	10.7		4	5.69	17.3		

TSH – 0.46-5.6 mIU/mL

FT4 – 11.5-22.7 pmol/L

FT3 – 3.0-6.2 pmol/L

T4 – 4.5-12.5 pmol/L

T3 – 81-178 pmol/L

Anti TPO - <34 IU/ml

Reference values for Table 6 for patients 5, 9 and 10 obtained by chemiluminescence. The values are different only for FT4 and FT3, the rest of the values are the same.

FT4 – 0.90-1.80 ng/mL

FT3 – 1.80-4.20 pg/mL

A total of 10 patients are included in Group 1, of which 8 are women and 2 are men. Patients' age ranged between 24 to 43, with a median age of 34. Most of the patients - 5 are at the age between 30 and 40 years. 3 patients are under 30 years old, 2 between 40 to 50 years old and there are no patients in the group over 50 years old. The same data is shown in graph 1 and table 3.

Graph 1. Gender differentiation

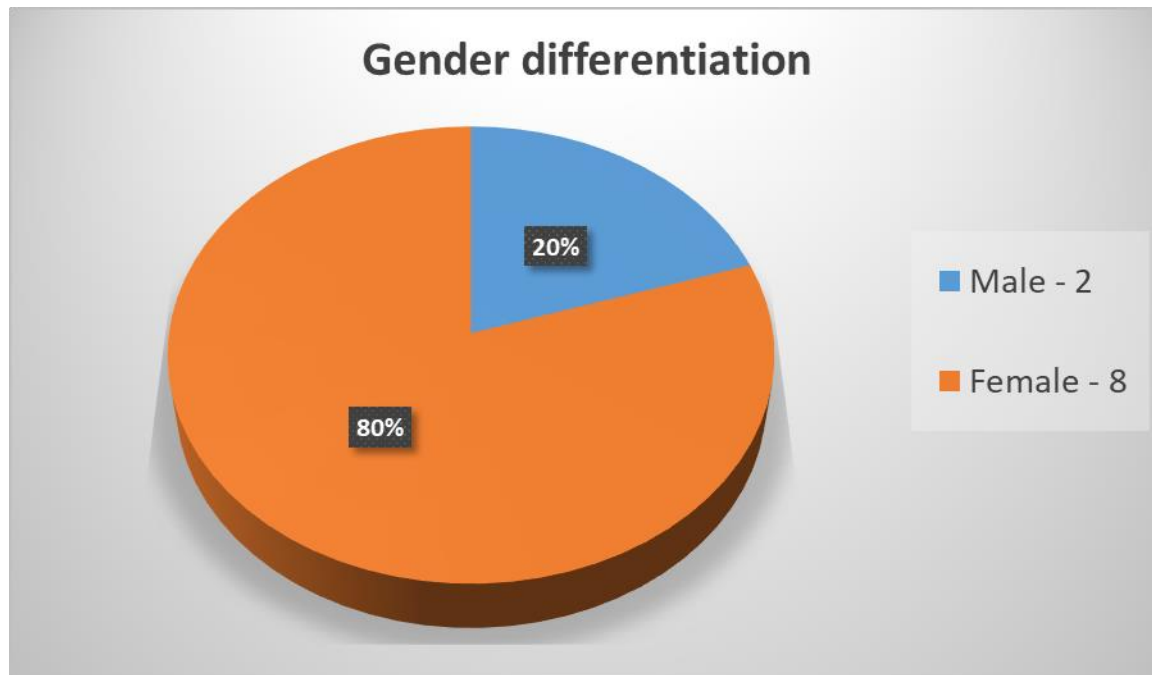


Table 3. Age groups

Age	Number of patients
<30	3
30-40	5
40-50	2
>50	/

Shown by number of therapies administered, most of the patients in Group 1 received 5 to 10 and more than 10 therapies. The same data is shown in Table 4.

Table 4. Number of treatments in group 1

Number of therapies	Number of patients
<5	2
5-10	4
>10	4

The symptoms that have appeared in this group of patients are typical symptoms of hypothyroidism: fatigue, brittle nails, weak hair, hair loss, drowsiness, lack of energy, muscle and joint pain, muscle spasms, irritability, depression, irregular menstrual cycle in women etc.

Group 2

Group 2 includes patients with hypothyroidism who were treated with acupuncture and received drug treatment. Most of the treated patients are in this group. Table 5 shows patients who have been diagnosed with hypothyroidism and have taken tablet treatment. A brief account is provided of the hormone hormones before and after acupuncture treatment and the number of acupuncture therapies administered. 22 patients, 19 women and 3 men, aged 24 to 62 years, were included. The average age is 40. Most of the patients are 30-40 years of age (9 patients), 7 between 40 to 50 and 3 patients in both the age group 50+ and the age group under 30. The same data is shown in table 10, as well as gender differentiation graph 2.

Table 5. Group 2 patients

No.	Gender	Age	TSH results before acupuncture	ft4 results before acupuncture	ft3 results before acupuncture	Number of acupuncture therapies	TSH results following acupuncture	ft4 results following acupuncture	ft3 results following acupuncture	Comment
1.	F	24	4.3	14,4		3 years, each week	2.8	13.8		Anti TPO before acupuncture more than 1000, after acupuncture less than 60. Before the treatment, he drinks Euthyrox of 25 mg, 4 years. After the treatment, he does not take tablets. Hashimoto's
2.	F	28	6.5	0.7		2 years, each week	4.1	0.9		Struma nodosa. After the treatment, he does not take tablets
3.	F	31	5.3	0.4		15	4.1	0.6		He received Euthyrox 125 mg only 1

									week before treatment. Does not take tablets after the treatment
4.	F	28	5.9	1.4	3	5.0	1.3		Takes Euthyrox 50mg
5.	F	34	5.063	1.04	36	5	14.4	6.33	Takes Euthyrox 50 mg before treatment, takes not tablets after treatment
6.	M	45	4.8	0.9	23	4.1	1.2		Takes ENdonorm-herbal treatment
7.	F	45	5.2	12.3	8	1.91	17.5		Takes Euthyrox, 50 mg
8.	F	34	5.03	1.14	5	3	1.2		Takes Euthyrox, 25 mg. Sterility Dr.
9.	M	45	4.9	13.9	14	3.96	9.07		Before the treatment takes Euthyrox 100mg. He does not receive treatment after acupuncture. Cholelithiasis
10.	F	44	5.1	14.4	4	4.9	12.0		Euthyrox 150mg during the week, 120mg at the weekend, corticosteroid treatment, HOB
11.	F	44	4.8	0.9	3	4.6	1.2		Takes Euthyrox 50 mg
12.	F	62	2,0	1,5	2	2,02	1,72		Takes Euthyrox 50 mg
13.	F	39	4.9	1.6	32	3.8	1.2		Before acupuncture she takes Euthyrox 25 mg tablets, after

									acupuncture she does not take tablets and remains pregnant (1 pregnancy)
14.	F	41	5,81	1.21	3.90	3	5.01	1.18	Takes Euthyrox 50 mg
15.	F	40	4.31	1.05		5	3.98	1.30	Breastfeeding woman. Takes Euthyrox 75mg during the week, 100mg at weekends
16.	F	40	4.7	12.1		8	0,86	14.8	Takes Euthyrox ,50 mg, Gout. H. Pylori, Hypertension
17.	F	51	7.15	0.912		12	3.99	1.01	Hashimoto's 1 year, anti TPO more than 1000. I started Euthyrox 50mg
18	M	43	14.3	0.873		20	4.11	0.78	Mon-Fri euthyrox 100mg weekend 75, anti tpo – 139.1
19	F	40	9			21	0.86	14.8	Hashimoto
20	F	57	5.24	12.3		20	1.01	17.5	Euthyrox 50 mg. Two nodules left
21	F	32	7.2	1.70		2 y and 2 months	2.8	1.60	3 months without reduction of euthyrox, 75 mg one eight reduction gradually, for 3 years now does not take anything
									Anti TPO > 1000
									Anti TPO - 30
22	F	31	3.85	1.31		16	5.558	1.22	Following delivery
									Anti TPO - 600
									Anti TPO –

Table 5 reference values for patients 1, 5, 7, 9, 10, 19, 20 and 22 according to ECLIA.TSH – 0.46-5.6 mIU/mL

FT4 – 11.5-22.7 pmol/L

FT3 – 3.0-6.2 pmol/L

T4 – 4.5-12.5 pmol/L

T3 – 81-178 pmol/L

Anti TPO - <34 IU/ml

Table 5 reference values for all other patients obtained by chemiluminescence. The values are different only for FT4 and FT3, the rest of the values are the same.

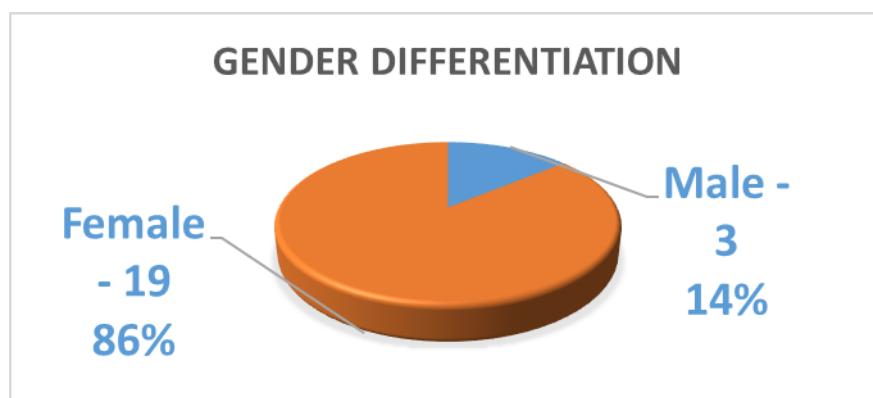
FT4 – 0.90-1.80 ng/mL

FT3 – 1.80-4.20 pg/mL

Table 6. Age groups

Age	Number of patients
<30	3
30-40	9
40-50	7
>50	3

Graph 2. Gender differentiation



Shown by the number of treatments administered, at least 13 patients received more than 10 treatments, 5 patients had less than 5 treatments, and 4 from 5 to 10 treatments. The same values are shown in table 7.

Table 7. Number of treatments in group 2

Number of therapies	Number of patients
<5	5

5-10	4
>10	13

The symptoms that have appeared in Group 2 patients are typical symptoms of hypothyroidism and are the same as those mentioned in Group 1.

Group 3

Group 3 includes patients with hyperthyroidism who were treated only with acupuncture. Table 8 shows patients who have been diagnosed with hyperthyroidism, but have not taken tablet treatment. A brief account is provided of hormone levels before and after acupuncture treatment and the number of acupuncture therapies administered.

Table 8. Group 3 patients

No.	Gen der	Age	TSH values before acupuncture	fT4 values before acupuncture	Number of therapies	TSH values after acupuncture	fT4 values after acupuncture	Comment
1.	F	40	4.3	15.1	2 years (the first year every week and the second year every 2 weeks)	3.8	1.2	Exophthalmos
2.	M	40	0.07	31.1	5	0.4	4.2	
3.	M	44	4.5	5.3	20	4.1	1.5	
4.	F	47	000.5	47.44	58	0.005	26	Anti TPO before treatment 426, after treatment fT3 = 15.70
5.	F	41	0.089	10.6	7	0.005	91.17	Irregular therapies. First result 2013 Second – 2017 Anti TPO=319.6
6.	F	31	0.004	17.2	18	0.005	11.4	Hypo in hyper
7	F	30			4	0.004	37.2	

Reference values for table 12 for patients 4 and 5 according to ECLIA.

TSH – 0.46-5.6 mIU/mL

FT4 – 11.5-22.7 pmol/L

FT3 – 3.0-6.2 pmol/L

T4 – 4.5-12.5 pmol/L

T3 – 81-178 pmol/L

Anti TPO - <34 IU/ml

Reference values for table 12 for all other patients obtained by chemiluminescence. The values are different only for FT4 and FT3, the rest of the values are the same.

FT4 – 0.90-1.80 ng/mL

FT3 – 1.80-4.20 pg/mL

In Group 3 there are a total of 7 patients, 2 males and 5 females, aged between 30 to 47. Average calculated age is 39 years. The most common age group is 30 -40, with 4 patients, while there are 3 patients in the age group 40 - 50. There are no patients in the group under 30 and over 50 years of age. The same results are shown in table 11. The difference according to gender is shown in graph 3.

Graph 3. Gender differentiation

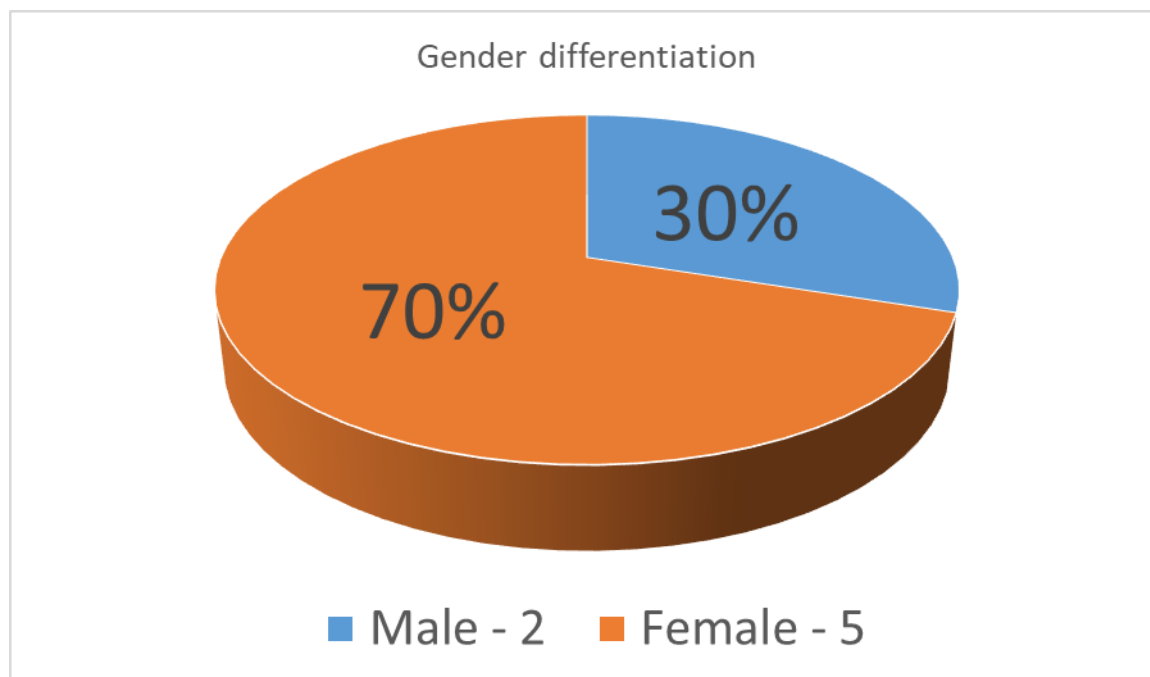


Table 9. Age groups

Age	Number of patients
<30	/
30-40	4

40-50	4
>50	/

By the number of therapies received, most of the patients have received more than 10 therapies - 5 patients, two have received from 5 to 10 and there are no patients in the group under 5 therapies. The same results are shown in table 10.

Table 10. Number of treatments in group 3

Number of treatments	Number of patients
<5	/
5-10	2
>10	5

The symptoms that are prevalent in Group 3 patients are symptoms typical of hyperthyroidism – insomnia, tremors, nervousness, emotional lability, sweating, heat intolerance, increased appetite, weight loss, brittle nails, thinning hair, muscle weakness, etc.

Group 4

Group 4 includes patients with hyperthyroidism who were treated with acupuncture and received drug treatment. This group includes 6 female patients, aged 26 to 45. Table 11 shows patients who have been diagnosed with hyperthyroidism and who are taking hormonal tablet treatment. A brief account is provided of the hormone levels before and after acupuncture treatment and the number of acupuncture therapies administered.

Table 16 shows the age groups. Most of the patients are aged between 40 and 50 – 4 female patients, 2 female patients under the age of 30, and there are no female patients in the groups of 30 to 40 and over 50.

Table 11. Patients with hyperthyroidism treated only with acupuncture

No.	Gender	Age	TSH before acupuncture	fT4 before acupuncture	fT3 before acupuncture	Number of acupuncture treatments	TSH after acupuncture	fT4 after acupuncture	fT3 after acupuncture	Comments
1.	F	41	0.571	1.06	5.60	10	1.10	15.82	5.01	The patient takes Tyrosol, the results before the acupuncture were obtained according to ECLIA. and the results after acupuncture were obtained with a serum test. Anti TPO < 10 IgG = 113.1 after treatment
2.	F	42	0.21	1,9		29	2,9	9.7 serum		Genetic predispositions mother, father, grandmother, sister
3.	F	45	0.011	0.79	4.05	20	1.64	0.41		The patient takes Propanolol
4.	F	27	0.01	43.7	10.4	3	0.19	20		The patient did not continue with the therapies because she is a foreign citizen. She takes Propanolol
5	F	26	0.07	77.2		23	1.34	15.10		She has been drinking Tyrozol for 10 months, she has polycystic ovaries Anti-TPO > 1000

								Anti-TPO < 34
6	F	41	2.8	10.8	3 years	4.35	10.8	Anti TPO < 10

Reference values for table 15 for all patients with results according to ECLIA.

TSH – 0.46-5.6 mIU/mL

FT4 – 11.5-22.7 pmol/L

FT3 – 3.0-6.2 pmol/L

T4 – 4.5-12.5 pmol/L

T3 – 81-178 pmol/L

Anti TPO - <34 IU/ml

Table 12. Age groups

Age	Number of patients
<30	2
30-40	/
40-50	4
>50	/

Shown by the number of therapies, most of the patients have received more than 10 therapies – 4 patients, while one patient received between 5 to 10 treatments and one less than 5. The same results are shown in table 13.

Table 13. Number of treatments in group 4

Number of treatments	Number of patients
<5	1
5-10	1
>10	4

The symptoms present in Group 4 patients are typical symptoms of hyperthyroidism and are the same as those mentioned in Group 3.

Of the hormonal therapies, some of the patients take Tyrozol, and some of them take Propanolol.

Group 5

Group 5 includes patients from the control group of patients with normal function of the thyroid gland. The included patients and the results of their laboratory analyzes are shown in table 14.

Table 14. Control group patients with normal levels of thyroid hormones

No.	Gender.	Age	TSH	FT4
1	F	48	3.1	
2	F	35	1.117	
3	F	41	1.7	13.4
4	F	36	4.09	
5	F	56	1.56	
6	F	42	3.34	
7	F		1.25	1.14
8	F	40	0.9	16.9
9	F	45	3.2	
10	F	43	3.31	
11	F	39	2.32	13.2
12	F	36	4.0	
13	F	28	3.95	
14	F		1.30	
15	F	44	1.9	14.0
16	F		3.31	
17	F	33	2.4	18.0
18	F	42	1.74	0.99
19	F	43	1.4	
20	F	43	1.06	0.67
21	F	40	1.35	14.7
22	F		2.22	
23	M		1.46	1.10
24	F	32	1.3	18.9

25 F 30 0.87 2.64

Table 18 reference values for patients 7, 18, 20, 23 and 25.

TSH – 0.46-5.6 mIU/mL

FT4 – 0.90-1.80 ng/mL

Table 18 reference values for FT4 for all other patients according to ECLIA.

FT4 – 11.5-22.7 pmol/L

This group includes 25 patients, 24 women and 1 male, aged 28 to 56, with an average age of 32. In some patients, age data is missing, but that data is irrelevant. All patients from Group 5 have a normal finding of the thyroid gland and with normal results of thyroid hormones. Children and women in menopause are excluded from this group.

Information on normal TSH values was presented in all 25 patients, and in 12 for FT4.

Table 15 shows the effect achieved in percentage for all 4 treated groups of patients.

Table. 15. Achieved effect in the four groups

Group	Effects (in percentages %)
Group 1	90%
Group 2	85%
Group 3	30%
Group 4	50%

In Group 1 of the treated patients, in 9 out of 10 treated patients the effect was achieved with complete normalization of TSH levels, and only in one patient the level was slightly elevated after the end of the treatments. The FT4 level after the treatments was normal in 9 patients, and in one patient it was slightly elevated. This patient received the therapies irregularly. As to patient no. 8, there was a decrease in Anti-TPO levels from 262 to 112 after 11 therapies, which is a sign that the body's immune system has been alerted and that the body is starting to stabilize the condition. There is a particularly significant result in patient no. 9, where TSH levels have decreased from 9.79 to 4.54 after only 8 treatments.

In Group 2, three of the patients were diagnosed with Hashimoto's hypothyroidism. One patient has nodules on the left thyroid lobe, one patient with struma nodosa, one patient with primary sterility, one patient with COPD and 3 breastfeeding or pregnant patients. In 18 patients, the TSH level was successfully reduced, and in 4 patients it was slightly elevated. In 20 patients the FT4 level was successfully normalized, and in two it was

slightly below the normal limit. In three patients, we have had tremendous success in reducing Anti-TPO levels and the same patients are no longer receiving hormonal pill treatment. Table no. 19 shows the patients and Anti-TPO levels before and after the treatments. The reference value for Anti-TPO is <34 IU/ml.

Table 19. Anti-TPO levels before and after the treatment in patients in group 2

Patient	Anti-TPO before treatment	Anti-TPO after treatment
No. 1	>1000	<60
No. 21	>1000	30
No. 22	600	16.76

21 of the patients from Group 2 were prescribed hormonal treatment with Euthyrox, and only one patient used Endonorm – herbal treatment. In the case of patients who were on Euthyrox the treatment was not cut short in the first three months, the rest stayed the same as prescribed by an endocrinologist. The treatment was reduced by one-eighth every three months, with hormonal drugs ultimately discontinued. In 7 patients, hormone treatment was completely abandoned and the patients are in excellent condition with excellent results.

A good and accurate diagnosis is the key to a good treatment result. In hypothyroid patients, the pulse is deep and slow, and the tongue is thick and swollen. In treating hypothyroidism, the goal of acupuncture treatment is to tonify Qi and Yang energy, regulate energy levels, re-establish hormonal balance, reduce TSH levels, regulate the immune system, and remove external pathogenic factors. The points that are treated for hypothyroidism are located on the meridians of Ren mai, Du mai, large intestine, liver, spleen, stomach and gall bladder. Any disturbance in these meridians can affect the function of the thyroid gland and other parts of the body with which it is connected. The points during the treatment were chosen in order to influence the energy flow of the meridians, to clear the energy pathways, to balance the energy, to release the flow of Qi, to remove all blockages, to remove all external pathogenic factors, to rebalance the function of the thyroid gland, restore the hormonal balance and strengthen the organs, especially the spleen and kidneys. [3]

Group 3 includes 7 patients, one of whom has exophthalmos. One patient has transitioned from a hypothyroid to a hyperthyroid state. Only in two patients was the TSH value successfully regulated, while in the rest, the values were low. In three patients the FT4 values were regulated, while they were enormously high in the remaining patients.

Group 4 includes 6 patients. One of the patients had polycystic ovary syndrome. Another patient had a genetic predisposition. In three patients, there was a normalization of the

TSH level, while in three patients there wasn't any. In 5 patients there was a normalization of the FT4 value, while only in one patient the level was high.

In one 26-year-old patient, we have a particular improvement in the condition with the normalization of TSH values from 0.07 to 1.34 (ref. value 0.90-1.80) and normalization of the FT4 level from 77.2 to 15.10 (ref. value 11.5-22.7). also the level of Anti TPO was reduced from over 1000 to under 34 (ref. value <34).

In treating hyperthyroidism the goal of acupuncture treatment is to add more Chi energy to the treated meridians, reactivate the energy and balance Yin and Yang. The acupuncture points used in the treatment were chosen to calm the heart, relax and unwind the liver, and tonify Qi and Yin. [5]

The same points are also used in hypothyroidism and hyperthyroidism because the treatment is about balancing the Yin and Yang energy and balancing the imbalance of hormones because every time patients come for treatment, they are stressed out and too tired. Basically, a complete balance of the hormones of the hypothalamus-pituitary-thyroid axis is made, while other hormones in the body are also covered, which gives a holistic approach to the disease and the patient. Therefore, the goal of the treatment is to reduce stress and fatigue, to balance Yin and Yang energy, to relax the patient, which will allow a better flow of blood and Qi energy, to improve circulation throughout the body, and especially in the neck area. Attached are photos of a patient treated with acupuncture who was included in the group of treated patients with hypothyroidism. The same acupoints are used in the treatment of hyperthyroidism.

Conclusion

After the completion of the treatments, the completed analysis and presentation of the obtained results, the following conclusions were drawn:

- In all four treated groups of hyperthyroidism and hypothyroidism with and without tablets, there is a significant difference in the success achieved during the treatments.
- Acupuncture treatment in treated patients with hypothyroidism without pills gave the best and fastest results with 90% improvement, unlike the other groups.
- In patients with hypothyroidism treated with acupuncture treatment and tablets, the treatment was more durable by reducing the tablet intake over a period of one year and with an efficiency of 85%
- In most patients with hypothyroidism treated with acupuncture treatment and tablets, the use of tablets was completely eliminated.
- Even after the therapies and reduction of the tablets dosage, the results were excellent and satisfactory in this group of patients as well.
- In the treated patients with hyperthyroidism only with acupuncture treatment, the changes in the results were small and did not give completely satisfactory results, i.e. there was an improvement of 30%.

- In patients with hyperthyroidism, due to the nature of the disease, there is a hyperactive, turbulent and hyper-reactive character, with a fast heart rate, elevated blood pressure and hand tremors, which contributed mostly to the unsatisfactory results and the patients' intolerance during the treatments.
- In patients with hyperthyroidism treated with acupuncture treatment and tablets, there were no particularly visible results after the treatments, and the improvement was 50%.
- We encountered the highest reactions by doctors in the improvement of Anti TPO antibodies in a certain number of patients, where they were successfully reduced despite the claim that the levels of Anti TPO antibodies are impossible to change.
- According to the gender distribution, more than 50% of patients are female;
- In 50% of patients, there is the presence of struma nodosa, and it is more pronounced in women.
- Most of the patients from all groups are aged 30-40.
- Most of the patients – more than 50% have received more than 10 treatments. Patients with long-term treatments have better results.
- Therefore, we can conclude that the best results are obtained in the acupuncture treatment of hypothyroidism without pills.
- Acupuncture as a treatment for hypothyroidism gives excellent and satisfying results, although sometimes it takes a longer period of time to see the results.
- Acupuncture as a treatment for hyperthyroidism has not given very satisfactory results, but it can still be used as a complementary treatment to drug treatment.
- Acupuncture treatment is more effective in hypothyroid conditions than in hyperthyroidism.

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