

ACUPUNCTURE TREATMENT IN FEMALE PATIENT WITH INFERTILITY DUE TO ELEVATED TSHBlagica Arsovska^{1,2}, Jihe Zhu¹ and Kristina Kozovska^{1,3*}¹Faculty of Medical Sciences, University Goce Delchev, Shtip, Republic of Macedonia.²Institute of Biology, Faculty of Natural Sciences and Mathematics, Skopje, Republic of Macedonia.³Medicine Faculty, St. Cyril and Methodius University of Skopje, Republic of Macedonia.***Corresponding Author: Kristina Kozovska**

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ABSTRACT

Infertility is a very common problem in couples of child-bearing age, affecting around 10% of the couples. Although today's technology is very advanced, 10%–15% of the infertile couples still fail to conceive after several in vitro fertilization (IVF) and embryo transfers. A lot of female patients who have infertility due to implantation failures, fail to produce pinopodes. Pinopodes are hormonally regulated cellular structures on the uterine epithelial surface, which promote receptivity. In the early stages of pregnancy, a receptive endometrium is critical for successful implantation of the embryo. In this article is reported a case of a 30 year old woman struggling with infertility due to high TSH levels. The patient was in preparation for in vitro fertilization. 4 acupuncture treatments were made in a period of 4 weeks starting from 27.06.20 to 17.07.20. Before the treatment the TSH level was increased above the normal rate (8.153 mUI/ml) and after the treatment the TSH level was normalized (3.028 mUI/ml). The TSH level was normalized with only 4 treatments in a period of 4 weeks. Immediately after the treatments, the patient began the in vitro fertilization procedure. The acupuncture treatment as part of the Traditional Chinese Medicine is an effective treatment in thyroid and fertility conditions with elevated TSH levels and can be successful in regulating the energy in the body and restoring the hormonal and the balance of the reproductive and endocrine system.

KEYWORDS: traditional Chinese medicine, acupuncture, thyroid, infertility.**INTRODUCTION**

Infertility is a very common problem in couples of child-bearing age, affecting around 10% of the couples. Although today's technology is very advanced, 10%–15% of the infertile couples still fail to conceive after several in vitro fertilization (IVF) and embryo transfers. The etiology for these implantation (and reproductive) failures include hormonal, genetic, infectious and anatomic factors and thrombophilic conditions. Reproductive failures can be also related with some autoimmune diseases, such as thyroid disorders, rheumatoid arthritis, systemic sclerosis and systemic lupus erythematosus. Thyroid autoimmunity disorders affect 5% to 20% of the normal pregnant women.^[1]

Hypothyroidism is often linked to the embryo implantation, since the changes in the highly regulated local activity of thyroid hormones (TH) and thyroid-stimulating hormone (TSH) interfere directly with the early implantation and embryo attachment. A study has declared that even without presence of thyroid function disorders, thyroid autoimmunity with elevated serum TPO-Ab and TG-Ab levels is associated with implantation failures.^[2]

A lot of female patients who have infertility due to implantation failures, fail to produce pinopodes. Pinopodes are hormonally regulated cellular structures on the uterine epithelial surface, which promote receptivity. The secretory vacuoles which are contained in the pinopodes extend into the lumen providing nutrients for the embryo, helping in its attachment to the endometrium. In the early stages of pregnancy, a receptive endometrium is critical for successful implantation of the embryo.^{[2], [3]}

According to some studies done for in vitro fertilization, a smooth pinopode surface has stronger adhesion to the embryo for implantation. Women with reduced implantation ability display few or no pinopodes. In a study done on mice with Hashimoto's thyroiditis, the luminal surface has been presented with abnormal pinopodes with small or wrinkled semispherical surfaces and significantly reduced number of pinopodes in each unit area. These findings suggest that euthyroid Hashimoto's thyroiditis affects the development of the luminal epithelium, inhibiting the development and of the pinopodes, thereby impairing the receptivity of the

endometrium and leading to implantation failure of the embryo.^[2]

Acupuncture as part of the Traditional Chinese Medicine (TCM) is very commonly used in infertility, endocrine, hormonal, reproductive and thyroid disorders. The treatment can help in balancing the hormones, regulating the energy and the blood flow, removing the phlegm and stasis, improving the thyroid, ovarian and follicular function and increasing the blood flow to the endometrium.^{[4], [5]}

CASE REPORT

In this article is reported a case of a 30 year old woman struggling with infertility due to high TSH levels. The patient had typical symptoms for hypothyroidism – hair loss, tiredness, fatigue, palpitations and similar. The patient wasn't taking any additional hormonal medications during the acupuncture sessions and before. The patient was in preparation for in vitro fertilization. 4 acupuncture treatments were made in a period of 4 weeks starting from 27.06.20 to 17.07.20.

The acupuncture treatments were made in a clinic for Traditional Chinese Medicine and acupuncture in Skopje by a doctor specialist in acupuncture. The treatments were made indoor, on a room temperature, one treatment per week, with duration of 30-45 minutes. In the treatments were used fine sterile disposable needles, produced by Wuijiang City Medical & Health Material Co.,LTD, size 0.25x25mm. Acupuncture points used in the treatment are: RN6 (QiHai), BL20 (PiShu), LI4 (HeGu), BL23 (ShenShu), DU20 (BaiHui), DU14 (DaZhui), ST9 (RenYing), ST36 (ZuSanLi), GB20 (FengChi), BL15 (XinShu), DU4 (MingMen), RN4 (QuanYuan), SP9 (YinLingQuan), SP6 (SanYinJiao), LR2 (TaiChong) and KI3 (TaiXi).

In table 1 are shown the results from the blood analysis made before and after the acupuncture treatments. Before the treatment the TSH level was increased above the normal rate (8.153 mUI/ml) and after the treatment the TSH level was normalized (3.028 mUI/ml).

The other parameters were within the normal range:

FSH – 6.5 mIU/ml (4.5 - 11)

LH – 3.7 mIU/ml (1.7 - 13.3)

Prolactin – 8.5 ng/mL (4.1 - 28.9)

Estradiol – 59.1 pg/mL (20 - 300.80)

Table.1 Blood results before and after the treatment.

	TSH (0.38 – 4,31 mIU/L)
Before Treatment	8.153
After Treatment	3.028

The TSH level was normalized with only 4 treatments in a period of less than 4 weeks. Immediately after the treatments, the patient began the in vitro fertilization procedure.

Low-normal TSH levels are considered from 0.38 to 2.5 mIU/L and from 2.5 to 4.31 mIU/L are considered high-normal TSH levels.^{[6], [7]}

For moderate thyroid disorders it is considered that hormone levels can be restored within few months, therefore the achieved results are more than satisfactory.^[8]

Acupuncture in patients with infertility can help in improvement of the endometrial morphology and can reduce the endometrial microcirculation, increase the levels of estrogen and progesterone, decrease the TSH levels and regulate the expression of the molecular biological regulator. With the treatment the endometrial receptivity can be improved, the pregnancy rate can be improved and a good environment for the embryo implantation can be provided.^[9] In IVF treatment, acupuncture affects estrogen levels, improves high-quality embryo rate, the morphology and the endometrial blood flow state so that the endometrial receptivity will increase.^[10]

The acupuncture points used in the treatment are used for reproductive and endocrine disorders with aim to improve fertility and regulate the neuro-immune-endocrine system and the key hormones of the pituitary-target gland axis – LH, FSH, E2, T3, T4 and TSH.^[11]

CONCLUSION

The acupuncture treatment as part of the Traditional Chinese Medicine is an effective treatment in thyroid and fertility conditions with elevated TSH levels and can be successful in regulating the energy in the body and restoring the hormonal and the balance of the reproductive and endocrine system.

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