CLINICAL THYROIDOLOGY **FOR THE PUBLIC**

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THYROID AND PREGNANCY

Immune suppression with prednisolone may improve in-vitro fertilization outcomes in women with anti-thyroid antibodies

BACKGROUND

It is well known that many women of child-bearing age have anti-thyroid antibodies. These are proteins present in blood that have been reported to be associated with problems such as recurrent miscarriages and premature birth. Many thyroid disorders are caused by anti-thyroid antibodies that attack and turn on or turn off the thyroid. Currently, it is not known whether anti-thyroid antibodies could also be one of the reasons why in-vitro fertilization (IVF) is not successful in many patients. There are studies suggesting that women who have three or more unsuccessful IVF attempts are more likely to carry anti-thyroid antibodies in their blood.

Many factors need to come together for successful in-vitro fertilization, including those related to the immune system. The thought that immune problems lead to anti-thyroid antibody production suggests that suppressing the immune system may be helpful. Glucocorticoid medications (ie prednisone) work to suppress the immune system; these medications may be of use for women who have anti-thyroid antibodies but have not been able to conceive with IVF. In fact, two studies have shown that the use of prednisolone (a glucocorticoid) was more successful than standard therapy in inducing pregnancy when using IVF techniques.

The goal of this study was to determine whether low dose prednisolone alone in women with anti-thyroid antibodies can improve the chances of becoming pregnant.

THE FULL ARTICLE TITLE

Litwicka K et al. In women with thyroid autoimmunity, does low-dose prednisolone administration, compared with no adjuvant therapy, improve in vitro fertilization clinical results? J Obstet Gynaecol Res. November 25, 2014 [Epub ahead of print].

SUMMARY OF THE STUDY

The patients that were enrolled in this study were going for treatment with IVF at a single clinic. They needed to meet certain requirements, such as being younger than 40 years of age, regular menstrual periods, normal ovaries on ultrasound and evidence that they had normal ovarian function. A total of 194 women met these criteria and were included in the study. A total of 60 women (31%) tested positive for anti-thyroid antibodies and were randomly assigned to either treatment with 5 mg of prednisolone a day to continue through the first trimester of pregnancy or to no treatment. Women who did not test positive for ATA were used as controls. All the patients underwent in-vitro fertilization using the same protocol.

At the end of the study, there was a higher pregnancy rate in the treatment group (60% vs 30%) and higher live birth rates (46.6% vs 20%) than in the no treatment group amongst anti-thyroid antibody-positive women.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

This study showed that the presence of anti-thyroid antibodies was associated with decreased rates of pregnancy and live birth and that the use of low dose prednisolone helped more anti-thyroid antibody-positive women have success when going through IVF. This study is important to patients because it provides for evidence that this treatment can be successful. More studies need to be done to show that the use of glucocorticoids during this stage of pregnancy is safe before this approach can be routinely recommended.

— Jesse Block-Galaraza, MD

ATA THYROID BROCHURE LINKS

Thyroid and Pregnancy: http://www.thyroid.org/thyroid-disease-and-pregnancy

THYROID AND PREGNANCY, continued

ABBREVIATIONS & DEFINITIONS

Autoimmune thyroid disease: a group of disorders that are caused by antibodies that get confused and attack the thyroid. These antibodies can either turn on the thyroid (Graves' disease, hyperthyroidism) or turn it off (Hashimoto's thyroiditis, hypothyroidism).

Antibodies: proteins that are produced by the body's immune cells that attack and destroy bacteria and viruses that cause infections. Occasionally the antibodies get confused and attack the body's own tissues, causing autoimmune disease.

Anti-thyroid antibodies: these are antibodies that attack the thyroid instead of bacteria and viruses, they are a marker for autoimmune thyroid disease, which is the main underlying cause for hypothyroidism and hyperthyroidism in the United States.

Steroids/Glucocorticoids: general anti-inflammatory and immunosuppressive drugs that are commonly used for the treatment of many autoimmune diseases associated with inflammation.

Miscarriage: this occurs when a baby dies in the first few months of a pregnancy, usually before 22 weeks of pregnancy.

In-vitro fertilization (IVF): a procedure when an egg is fertilized outside of the body and then implanted in a woman to achieve a pregnancy

Thyroid Awareness Monthly Campaigns

The ATA will be highlighting a distinct thyroid disorder each month and a portion of the sales for Bravelets™ will be donated to the ATA. The month of March is **Hashimoto's Disease Awareness Month** and a bracelet is available through the ATA Marketplace to support thyroid cancer awareness and education related to thyroid disease.