Thyroid Autoimmunity, Pregnancy and Finally, Data from Kerala

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ABSTRACT

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In a prospective study of euthyroid pregnant women, subjects with anti-TPO positivity were either treated with LT4 (n=57) or not treated (n=58). The authors reported that LT4 therapy in euthyroid TPO+ve pregnancies could improve miscarriage rate by 75% and premature deliveries by 69%.[27] Antibody positive subjects had a higher TSH at baseline (though within the euthyroid range) as compared with antibody negative group. The results of this study suggest that subjects with the autoimmune thyroid disease may have a subtle deficiency of thyroid hormones due to impaired adaptability, and also implies that the judicious use of levothyroxine, at least in subjects with a high-normal TSH, could improve outcomes.

The authors carried out thyroid function in a selected group of neonates born to these mothers, and from the results conclude that such thyroid autoimmunity alone does not "necessarily" imply neonatal thyroid dysfunction. This is indeed an excellent effort at generating valuable data on this intriguing illness.

Keywords: Maternal hypothyroidism, Autoimmune, Antibodies, Postpartum thyroiditis

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Maternal hypothyroidism, as defined by a raised TSH level, occurs in about 2.5% of all pregnancies.[1] This means that about 40 patients need to be screened to detect one case. In iodine-sufficient areas, the most common cause is Hashimoto's thyroiditis. Thyroid autoimmunity coexisting with any degree of hypothyroidism need to be treated aggressively. The diagnosis of maternal hypothyroidism is important because of its implications on both maternal and fetal outcomes.[2,3,4] This is even true with subclinical hypothyroidism.[5]

It is well known that the drug of choice is levothyroxine (LT4).[6] Even the mildest forms of hypothyroidism need to be aggressively treated during pregnancy, in order to ensure a favorable outcome.

What about pregnant, euthyroid subjects with isolated anti-thyroid antibody positivity? It is well known that thyroid autoimmunity is a risk factor for pregnancy loss.[7] Three explanations have been proposed: firstly, antithyroid antibodies may only be a marker of generalized autoimmunity, which could explain the high occurrence of miscarriages.[8] Secondly anti-TPO (anti-thyroid peroxidase) antibodies, a marker of autoimmune thyroid disease (AITD) could pick out groups of subjects with subtle damage to the thyroid gland. These subjects might be at risk of developing hypothyroidism because the thyroid gland that is damaged via autoimmune mechanisms is unable to adjust to the physiological loads that are imposed on it during pregnancy.[8] The third hypotheses questions the role of these antibodies, suggesting that both anti-TPO positivity as well as miscarriages are common in older women: thus this hypothesis suggests that the link between thyroid autoimmunity and pregnancy loss is a statistical aberration that is borne out of the confounding effect of age.[8] None of these hypotheses have been proved or disproved, despite several studies on the issue.

A study was attempted to answer this question.[9] In a prospective study of euthyroid pregnant women, subjects with anti-TPO positivity were either treated with LT4 (n=57) or not treated (n=58). The authors reported that LT4 therapy in euthyroid TPO^{+ve} pregnancies could improve miscarriage rate by 75% and premature deliveries by 69%.[27] Antibody positive subjects had a higher TSH at baseline (though within the euthyroid range) as compared with antibody negative group. The results of this study suggest that subjects with the autoimmune thyroid disease may have a subtle deficiency of thyroid hormones due to impaired adaptability, and also implies that the judicious use of levothyroxine, at least in subjects with a high-normal TSH, could improve outcomes. More studies are needed

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before these findings can change clinical practice. For the moment, the study outcomes indicate that pregnant women with high anti-TPO titers should probably be treated even if the TSH is mildly raised or even in the high- normal range. Till randomized trials are available, it is important to keep the FT4 normal and the TSH below 2.5 mu/l in such pregnancies.

A final issue is post-partum thyroiditis, which causes transient hyperthyroidism, followed by euthyroidism, which may either persist, or transform into hypothyroidism. While it is generally well-known that thyroid autoantibody positivity is an association, this disease is shrouded in a mysterious veil. In this issue of the journal, Vijayan et al provide compelling evidence that a proportion of pregnant women have thyroid autoantibodies, and that antibody positivity predicted hypothyroidism in a longitudinal follow up model.[10] Proceeding further, the authors carried out thyroid function in a selected group of neonates born to these mothers, and from the results conclude that such thyroid autoimmunity alone does not "necessarily" imply neonatal thyroid dysfunction. This is indeed an excellent effort at generating valuable data on this intriguing illness. Such data is eye- opening and particularly welcome as it comes from our own state of Kerala. Further research concerning post-partum thyroiditis is welcome. Let us hope that this study ushers in an era of research into the genesis, progression, and profile of post-partum thyroiditis in patients from our own state of Kerala.

END NOTE

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