"Pregnancy and Thyroid Disease": early detection and optimized management

Pregnancy has a profound impact on the thyroid economy and function, and may result in hypothyroidism in women with limited thyroid reserves or iodine deficiency. Well established overt hypothyroidism and hyperthyroidism have deleterious effects on pregnancy. In addition, maternal subclinical hypothyroidism and subclinical hyperthyroidism have the potential to impact maternal and fetal health. The association between miscarriage and preterm delivery in euthyroid TPOAb positive women has also been documented. Therefore, early detection and proper management of thyroid alterations before and during pregnancy could help to prevent unwanted adverse effects of thyroid dysfunction on pregnant women and their fetuses.

This focused issue on "Thyroid and Pregnancy" has been arranged by a group of international experts in the field of thyroid disease and pregnancy addressing the "State of Art" of development in this field.

Most recent advances of changes in thyroid function and challenges in interpretation of thyroid function tests has been discussed by one of the top experts in this topic. This is followed by a section on "iodine nutrition in pregnancy" which emphasizes the proper use of iodine supplementation before and during pregnancy.

Hypothyroidism occurs in about 2.5% of pregnancies, mostly in its subclinical form, and may lead to obstetric and neonatal complications; the sections on "Hypothyroidism and pregnancy" and "Autoimmune thyroid disease and pregnancy" review the most recent findings on the effects of thyroid hypofunction and autoimmunity in pregnancy and the recommendations of guidelines for appropriate replacement therapy in both subclinical and overt hypothyroidism.

Hyperthyroidism occurs in 0.2% of pregnancies and is best managed with antithyroid treatment. With respect to proven fetal development abnormalities, caused by antithyroid drugs, inconsistencies in the management of hyperthyroidism before and during pregnancy exist. Cautious recommendations leaning toward ablative therapy before pregnancy and other issues have been discussed in the article "*A look at the management of Graves' hyperthyroidism in pregnancy*".

Most prestigious guidelines recommend a case finding approach targeting thyroid function testing in high risk groups. This approach has however been questioned by some investigators, who have found that targeted screening may miss 30–35% of cases with thyroid abnormalities. It should be noted that until now, neither universal nor targeted case findings have been documented to result in improved population outcomes. This and other issues have been discussed in section of "*Screening for thyroid dysfunction in pregnancy*".

One of the most important and evolving issues has been "Preconception counseling for thyroid disorders". The related article discloses the most important recommendations in preconception management of normal women, as well as those with thyroid dysfunction.

The final article of this "special issue" deals with "Postpartum thyroid disease". Rather common clinical conditions with special management difficulties, for both mother and child, in particular in breastfeeding conditions.

Thyroid diseases, both clinical and subclinical, are common during pregnancy and postpartum and influence the health of mother, fetus and infant. Effective evidence-based strategies for both detection and management should be developed for the benefit of both mother and child. We hope that the articles of this issue will be helpful for physicians in the prompt and appropriate diagnosis and treatment of thyroid disease in pregnancy, in order to dramatically improve pregnancy outcomes and ensure health promotion for mother and infant.

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