HYPOTHYROIDISM AND PREGNANCY

Thyroid disease is particularly common in women of child-bearing age. As a result, it is no surprise that thyroid disease may complicate the course of pregnancy. It is estimated that 2.5% of all pregnant women have some degree of hypothyroidism. The frequency varies among different populations and different countries. Though we do not have the actual data in hands, we are confident enough that large number pregnant women in Bangladesh suffer from hypothyroidism .Thyroid disorders during pregnancy may affect both mother and baby.

What happens with thyroid disease?

Disease of the thyroid gland is extremely common. In some conditions, the thyroid may produce too much hormone. In other conditions, the thyroid may be damaged or destroyed and little, if any, thyroid hormone is produced. The main thyroid hormone is called thyroxin, or T4.

Symptoms vary depending on whether there is too much or too little T4 in the blood. With an excess of T4 (hyperthyroidism), patients complain of feeling restless, emotionally hyper, and hot and sweaty. They may have tremors, trouble concentrating, and weight loss. Frequent bowel movements and diarrhea are common.

If T4 levels are low (hypothyroidism) as a result of decreased production by the thyroid gland, patients often notice fatigue, lethargy, and weight gain. Constipation is common and many patients with hypothyroidism report feeling excessively cold.

How is hypothyroidism treated during pregnancy?

The treatment of hypothyroidism during pregnancy is relatively straightforward in most cases. A synthetic form of T4 is given to replace the missing hormone. The dose of the medication is regularly adjusted to maintain a steady blood level of thyroid hormone within the normal range. Therefore, it is routine practice to monitor the blood level of the thyroid stimulating hormone (TSH) while monitoring hypothyroidism during pregnancy. In many respects, the treatment of hypothyroidism in pregnancy is similar to that in nonpregnant women. For more information, please read the article on Hypothyroidism.

What are the consequences of hypothyroidism during pregnancy?

For years, physicians have known of a link between mothers with hypothyroidism during pregnancy and developmental delay in their children after birth. This was particularly seen in mothers who came from iodine deficient areas of the country (iodine is necessary to produce thyroid hormone and is now a common component of the salt in our foods) and was also observed in mothers with autoimmune thyroid disease, such as Hashimoto's thyroiditis.

There is a relationship between thyroid levels in the mother and brain development of her child. A large study reported in 1999 found that undetected or inadequately treated hypothyroidism in mothers was associated with IQ changes in the infants of these women. The average IQ scores were about 4 points lower in the children of hypothyroid mothers than in children of normal

mothers. Larger IQ deficits were seen in the children of mothers who had more severe hypothyroidism. These children had an average IQ 7 points lower than normal. In addition, almost 20% of these children had IQ scores of less than 85 compared to 5% of the children of normal mothers. The children of hypothyroid mothers were also more likely to have difficulty in school or have repeated grades.

This study demonstrates that uncontrolled hypothyroidism in pregnant women can have long-term effects on the children of these mothers. Also, the effects occur even if the hypothyroidism is mild and the woman does not exhibit any symptoms. However, the more significant the hypothyroidism, the greater the likelihood of developmental problems.

How early does the mother's thyroid hormone affect the unborn baby?

Before birth a baby is entirely dependent on the mother for thyroid hormone until the baby's own thyroid gland can start to function. This usually does not occur until about 12 weeks of gestation (the end of the first trimester of pregnancy). Thus, hypothyroidism of the mother may play a role early on, before many women realize they are pregnant! In fact, the babies of mothers who were hypothyroid in the first part of pregnancy, then adequately treated, exhibited slower motor development than the babies of normal mothers. However, during the later part of pregnancy, hypothyroidism in the mother can also have adverse effects on the baby, as pointed out by the research described above. These children are more likely to have intellectual impairment.

What can be done to avoid the consequences of hypothyroidism in pregnancy?

A number of medical associations and organizations have made recommendations on screening for thyroid disease. Some of the recommendations are listed below:

- All women who are planning a pregnancy should be considered for screening of thyroid disease.

- All pregnant women with a goiter (enlarged thyroid), high blood levels of thyroid antibodies, a family history of thyroid disease, or symptoms of hypothyroidism should be tested for hypothyroidism.

- In women who are borderline, or sub-clinical, hypothyroid (for example, not in the laboratory range for true hypothyroidism, but within the low normal range) and who also have positive antibodies (which may indicate an ongoing autoimmune thyroid destruction), therapy with low dose thyroid hormone at the onset of pregnancy may be beneficial.

- There is some evidence that the antibodies that may contribute to hypothyroidism can play a role in pregnancy. Data suggest that selenium supplementation may be of benefit in women with high antibody levels at the time of preconception. This should be reviewed with your doctor.

- Women who are on thyroid hormone replacement before pregnancy should also be tested to make certain that their levels are appropriate. During pregnancy, the medication dose

required may increase by up to 50%. Increases may be required as early as in the first trimester.

- Dosing is dynamic during pregnancy and should be closely monitored by regular blood testing. As the pregnancy progresses, many women require higher doses of hormone replacement.

- The dosage of thyroid hormone replacement during and after pregnancy should be carefully monitored using the blood thyroid stimulating hormone (TSH) value. The laboratory ranges for normal TSH are quite wide. Most clinicians like to keep women who are pregnant and on replacement in the "hyper" end of the normal range. This usually equates to a TSH of <2.0. Many clinicians prefer TSH in the <1.0 range.

- In women with hypothyroidism before conception, most go back to their pre-pregnancy dose of thyroid hormone within a few weeks to months.

It must be stressed that these are only guidelines. The management of each woman's situation is considered individually after consultation with her physician. The benefits of treatment extend not only to pregnant women with hypothyroidism, but also to their children.

Hypothyroidism During Pregnancy At A Glance

- Hypothyroidism, wherein the thyroid gland produces an inadequate amount of thyroid hormone, is a common disorder particularly in women of childbearing age.

- Hypothyroidism of the mother during pregnancy may result in developmental delay in the child.

- Treatment of hypothyroidism requires thyroid hormone medication.

- There may be indications to start thyroid hormone therapy in women who are borderline in thyroid function and who are either pregnant or desiring pregnancy.

- The treatment goal of hypothyroidism in pregnancy is to maintain a thyroid hormone level within high normal range.

- Pregnant women who are on thyroid hormone should have blood testing frequently during pregnancy as requirements may change.

Dr Shahjada Selim

Assistant Professor

Department of Endocrinology

Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh

Cell: +880 1919000022

Chamber

Comfort Doctors' Chamber 165-166 Green Road, Dhaka Mobile:

01731956033, 01552468377, **01919000022**

Email: selimshahjada@gmail.com