Maternal hypothyroidism affects between 0.19% and 2.5% of pregnancies, depending on race and geographic area. Many hypothyroid women (>70%) have anovulatory cycles and, when they conceive, have high rates of fetal loss in the first trimester (more than twice as many spontaneous abortions as normal women). Studies have shown that the fetuses of hypothyroid women have 10% to 20% more congenital anomalies, 20% more perinatal mortality (stillbirth and neonatal death), and 50% to 60% higher rates of impaired mental and somatic development than those of non-affected women. Maternal complications include overt anemia, preeclampsia, abruptio placentae, cardiac dysfunction, and hypertension.

Effects of hypothyroidism
Two recent studies have shown that low maternal thyroid hormone concentrations during early gestation might be associated with substantially lower IQ scores in children when tested at school age. Also, the children of hypothyroid women with high concentrations of TSH due to inadequate doses of levothyroxine have impaired psychological development compared with carefully matched control children. It is important to note that the IQs of children of women who had high TSH concentrations but did not exhibit clinical hypothyroidism were also affected. Eventually many of these women developed clinical disease. Table 1 shows the range of results of thyroid function tests in nonpregnant, pregnant, and hypothyroid pregnant women.

Do you have questions about the safety of drugs, chemicals, radiation, or infections in women who are pregnant or breastfeeding? We invite you to submit them to the Motherisk Program by fax at (416) 813-7562; they will be addressed in future Motherisk Updates. Published Motherisk Updates are available on the College of Family Physicians of Canada website (www.cfpc.ca). Some articles are published in The Motherisk Newsletter and on the Motherisk website (www.motherisk.org) also.

Motherisk questions are prepared by the Motherisk Team at the Hospital for Sick Children in Toronto. Dr Nikfar is from the Treman Drug Information Service in Iran, and Dr Koren is Director of the Motherisk Team.
When to take levothyroxine

The best time to take levothyroxine is early in the morning on an empty stomach. Some women, particularly during the first trimester, might not be able to tolerate medications at that time of day due to morning sickness, and it is probably better to allow them to take levothyroxine later when they are not experiencing nausea and vomiting. Insisting on administration of the medication early in the morning (regardless of patients’ symptoms) might lead to skipping this important medication too often.

Many pregnant women take ferrous sulfate during pregnancy. This medication could form insoluble ferrithyroxin complexes in the gastrointestinal tract and result in reduced absorption of levothyroxine. Ingestion of these two drugs should be separated by at least 2 hours. Other medications that might affect levothyroxine absorption are shown in Table 2. Other medications that might affect levothyroxine absorption are shown in Table 2.10

Conclusion

Maintenance of thyroid hormone levels within the normal range is vital for pregnant woman to ensure optimal maternal and fetal health. Improved outcomes of pregnancy in hypothyroid women have been achieved through efforts to identify and treat these women. Euthyroidism must be reached and maintained in a timely fashion. Levothyroxine is the treatment of choice. Levels of both TSH and thyroid hormone need to be monitored periodically, and concurrent administration of other medications should be carefully followed.

References