Liothyronine in pregnancy and lactation

Hypothyroidism affects 3-4% of all pregnancies. If left undertreated or untreated, maternal hypothyroidism is associated with adverse foetal and maternal outcomes.

In the first 12 weeks of pregnancy, the foetus relies on the gestational parents supply of thyroid hormone, which passes through the placenta, after 12 weeks gestation, the foetus's thyroid begins to work independently, but isn't self-sufficient until nearer 18-20 weeks gestation.

Levothyroxine (T4) crosses the placenta and supplies the foetus's thyroid hormone needs, in early pregnancy, T3 cannot enter the foetus's brain, the T3 needed by the foetus is made from T4 supplied by the parent. There is limited data on the use of liothyronine available for use while pregnant, but data suggests it does not cross the placenta in significant amounts, data also does not suggest it would pose a risk of malformations to the foetus, however the risk of inadequate T4 in the foetus if the parent is treated with liothyronine means liothyronine in pregnancy is not recommended.

Women and people able to become pregnant should take effective contraception during treatment with liothyronine, if a pregnancy is planned, adequate control of their hypothyroidism should be maintained with levothyroxine at least 3 months in advance of becoming pregnant (alongside folic acid and vitamin D), or as soon as a positive pregnancy test is received if it wasn't possible to switch in advance to protect the pregnancy.

Levothyroxine needs during pregnancy usually increase; regular monitoring will be needed to maintain levels within pregnancy reference ranges which are different to non-pregnant reference ranges.

Liothyronine may be used during lactation, little enters the milk, however because there is no data available on exogenous liothyronine during lactation, levothyroxine may be preferred. Levothyroxine is compatible with lactation; adequate hormone levels are necessary to achieve a full milk supply. Thyroid hormones are a normal component of human milk. If blood tests are within reference ranges, do not presume thyroid levels are the cause of milk supply problems if present, parent should be directed to face-to-face support with the infant feeding team.

References:

Combination Levothyroxine + Liothyronine Treatment in Pregnancy - PubMed (nih.gov)

Thyroid Disease & Pregnancy | NIDDK (nih.gov)

Scenario: Preconception or pregnant | Management | Hypothyroidism | CKS | NICE

Microsoft Word - Pregnancy_and_fertility_in_thyroid_disorders.docx (btf-thyroid.org)

Levothyroxine – Medicines – SPS - Specialist Pharmacy Service – The first stop for professional medicines advice

Thyroid medication (under and over active) and Breastfeeding - The Breastfeeding Network

Liothyronine - Drugs and Lactation Database (LactMed®) - NCBI Bookshelf (nih.gov)

Liothyronine. In: REPROTOX® Database (electronic version). Truven Health Analytics, Greenwood Village, Colorado, USA. Available at: http://www.micromedexsolutions.com/ (cited: 08/02/2023).

Medicines in pregnancy, children and lactation - NHS Somerset

Infant Feeding - NHS Somerset