Clinical review of the identification and management of infants born to mothers with thyroid disease – is there a role for routine testing of maternal thyroid receptor antibodies (TRAB) in current practice?

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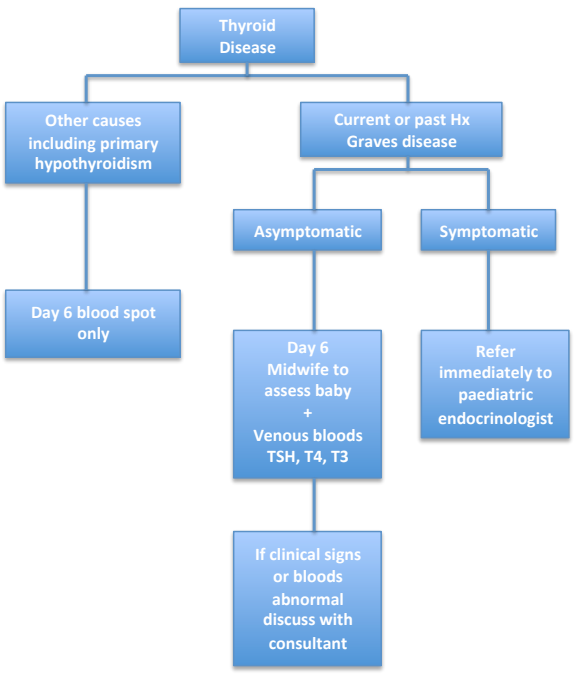
Background

Infants born to mothers with a history of thyroid disease may be at risk of developing neonatal thyrotoxicosis. Although rare, affecting approximately 1% of infants, maternal thyroid disease can have serious consequences including intrauterine or neonatal death. Maternal Grave's disease poses a significant risk due to trans-placental passage of Thyroid Receptor Antibodies (TRAB).

Local Management of Infants



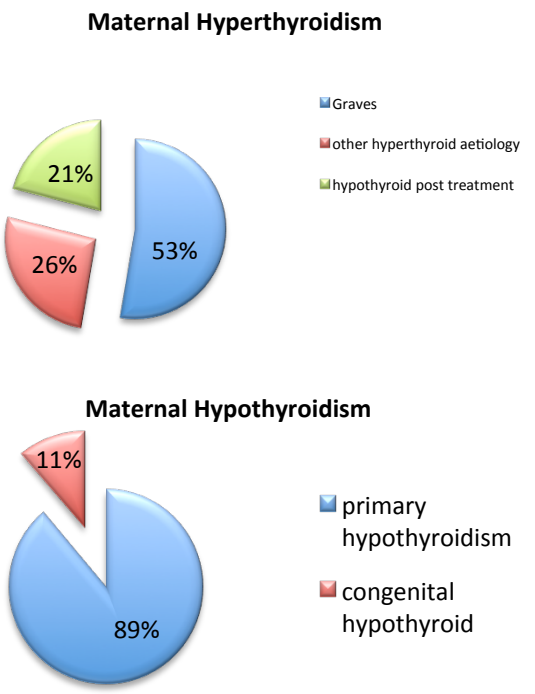
Methodology

Mothers with thyroid disease and their subsequent infants were audited retrospectively against local guidance between 1st March 2014 – 1st March 2015. Criteria and standards were selected against the local guideline. Maternal thyroid antibody status was also collated in order to determine the extent current testing.

Demographics

31 mothers and babies identified by NNAF. 3 cases excluded as moved out of area. 19 were found to have hyperthyroidism, 9 had hypothyroidism.

Aetiology of maternal thyroid disease



Results

- The exact aetiology of maternal thyroid disease was only documented on 16% NNAFs and in 79% of infants notes.
- No infants developed symptomatic thyroid disease during this audit period.
- Three asymptomatic infants, however, found to have abnormal TFTs on day 6.

TRAB were only tested in 61% of hyperthyroid mothers and only 70% of those with Graves disease were tested. 0% of these had their TRAB documented on the neonatal alert form or infants notes.

Implementation

1. Audit data presented at Quality of Care joint meeting between Obstetric and Neonatal departments to alert staff of deficiencies, stimulated discussion and recommend change
2. Audit shared with paediatric and adult endocrinology teams.
3. Maternal and neonatal guidance updated including new guidance on TRAB testing

Routine TRAB Testing - which pregnant women should be tested?

1. Patients with overt thyrotoxicosis
2. History of Grave's disease treated with radioiodine or thyroidectomy (who may now present as euthyroid or hypothyroid on replacement)
3. Mothers with a previously elevated TRAB or previous infant with neonatal thyrotoxicosis

Measurement of TRAB is recommended at 16-22 weeks and may be repeated if positive at 30 weeks of pregnancy

Mothers with current or past hyperthyroidism including their TRAB status must be documented on NNAF

Discussion/Conclusion

This audit highlights the importance of accurate identification of maternal thyroid aetiology on the neonatal alert form and newborn review in order to identify and manage risk, especially to infants of mothers with secondary hypothyroidism. Therefore pre-alert of all mothers with thyroid disease is currently deemed necessary. The introduction of TRAB testing for all hyperthyroid mothers (present or current) will greater identify infants at risk.

A re-audit is planned in 6 months. If practice improved and implementation of TRAB testing successful, it may be possible that mothers with primary hypothyroidism will no longer be deemed to be at risk and the need for neonatal alert removed .