SCREENING FOR NEONATAL GRAVES' DISEASE PROTOCOL

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Background: Neonatal Graves' disease occurs in ~ 1 in 25,000 pregnancies and ~1-5% of infants born to mothers with Graves' disease. It is due to the transfer of maternal antibodies that stimulate the TSH receptor (TSI or thyroid stimulating immunoglobulin) and typically lasts 3-12 weeks as the maternal antibody disappears from the infant's circulation. Neonatal hyperthyroidism is most likely when the maternal TSI is > 500 % of normal.

The infant can have hypo- or hyperthyroidism following delivery, depending on the balance of stimulating and inhibitory antibodies, and maternal antithyroid drug (ATD) use.

Signs and Symptoms of hyperthyroidism include:

1) SGA/IUGR
2) Premature birth
3) Microcephaly
4) Warm, moist skin
5) Irritability, hyperactivity, restlessness
6) Tachycardia and arrhythmias
7) Hyperphagia, but poor weight gain, and diarrhea
8) Hepatosplenomegaly
9) Diffuse goiter occasionally large enough to compress the airway
10) Stare and occasionally exophthalmos

Symptom development can be variable especially if mother is taking ATDs.

Long term adverse effects can be seen from neonatal hyperthyroidism including decreased IQ, growth retardation, craniosynostosis, hyperactivity, and developmental and behavioral problems.

LAB RECOMMENDATIONS

For all infants born to mothers with a history of Graves' disease regardless if mother has a history of thyroid radioablation, thyroidectomy or is taking or not taking ATDs.

Caveats are if the cord blood TSI is normal or if the mother has a normal TSI titer prior to delivery, then no labs need to be obtained but the infant should be followed clinically and TSH, Free T4 (FT4),Total T3 sent if signs and symptoms develop.

DOL #3 (if being discharged after 2 days then prior to discharge)
Obtain TSH, FT4, TSI and TBII (Thyrotropin binding inhibitory immunoglobulin)

Advise caregivers on signs and symptoms of hyperthyroidism to watch for

DOL#10
Office visit with PCP and obtain TSH, FT4

If symptomatic, add a Total T3 and Consult Endocrine.

References

LaFranchi S. Evaluation and Management Neonatal Graves' Disease. Up to Date June 2017
Sperling MA. Pediatric Endocrinology. 4th Edition. 2014
LaFranchi et al J. Peds 2003
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