Guideline for the Management of Thyroid Disease in Pregnancy

Section 1 – Introduction

Thyroid dysfunction affects 1% of pregnancies. It is known that thyroid disturbance is associated with adverse pregnancy outcomes such as preterm delivery, low birthweight infants, miscarriage, gestational hypertension and stillbirth [(1)]. The most common thyroid disease seen in clinical practice is hypothyroidism. The aim of this guideline is to inform the health care provider of the framework for managing these patients and to provide guidance for onward referral.

Section 2 – Scope

This guideline is available for guidance in the management of pregnant women with thyroid disease in both the inpatient and outpatient setting NHS Lanarkshire.

Section 3 – Guidance

The following NHSL pregnancy-specific trimester reference ranges should be used in the interpretation of all TFT's whether a woman during pregnancy. However, when a patient in on medication for hypothyroidism we aim for a TSH <2.5mU/L and a T4 of 16-21 pmol/L

	1st trimester	2nd trimester	3rd trimester
TSH (mlU/L)	0.1 – 3.0	0.1 – 3.4	0.1 – 3.7
T3 (pmol/L)	3.8 – 6.3	3.5 – 6.1	3.4 – 5.3
T4 (pmol/L)	12.1 – 18.7	9.1 – 18.3	8.4 – 15.7

Hypothyroidism

TFT results will indicate a raised TSH and low T3 and T4. For patient's on adequate thyroid replacement therapy maternal and fetal outcomes are good and the pregnancy is unaffected by hypothyroidism. Hypothyroidism can occur after treatment for hyperthyroidism, for example radioactive iodine therapy for Grave's disease. The difference for this group is that there is a very small risk of neonatal thyrotoxicosis because of transplacental transfer of thyroid stimulating antibodies (TRABS).[2]

Hyperthyroidism

TFT results indicate a raised T3 and T4 and suppressed TSH. The most common cause of hyperthyroidism in pregnancy is Graves' disease. For those patients with good control on anti-thyroid drugs and those women in remission from Graves disease maternal and fetal outcomes are usually good and the pregnancy is unaffected by maternal hyperthyroidism. These women will be managed in the Medical Obstetric Clinic therefore the role for the Generalist and Midwifery team is identification and referral to the Medical Obstetric Team following booking appointment. Ideally these women should also have received pre-pregnancy counselling through the medical obstetric clinic.

Group A: those with current/previous hypothyroidism (no history of hyperthyroidism/thyrotoxicosis):

Gestation/Situation	Background/action	Responsible clinician	Recommendation
Pre-pregnancy	Often no input or pre-pregnancy review required as managed in primary care		
Booking appointment with CMW	Check TFT's (TSH/T4/T3) Document current thyroxine dose and ensure compliance. Reassure that thyroxine is safe in	CMW/GP	Aim for a TSH<2.5mU/L Advise that CMW should liaise with named Consultant who should liaise

Gestation / Situation	Background / action	Responsible clinician	Recommendation
	pregnancy. All women should have thyroxine dose increased when a pregnancy is confirmed by 25mcg.[3]		with GP
During pregnancy	Check TFT's 6 weekly if stable, check more frequently if further changes to dose (2-4 weeks after dose change) Growth scans are not indicated.	CMW/named medical team	Ensure compliance. Aim for TSH<2.5mU/L CMW to liaise with named Consultant regarding any increase in medications. If TSH remains significantly elevated seek advice from Medical Obstetric Team.
Intrapartum	Treat as per pathway for intrapartum management		
Postnatal	Patient to return to pre-pregnancy dose prior to discharge. TFT's should be check 2-6 weeks postnatally by patient's primary care provider	GP	Immediate discharge summary to communicate change of dose with GP, patient advised to arrange follow up with GP.

Group B: those who are euthyroid/hypothyroid after treatment for previous hyperthyroidism/thyrotoxicosis:

Gestation/Situation	Background/Action	Responsible clinician	Recommendation
Pre-pregnancy	Often no input or pre-pregnancy review required as managed in primary care		
Booking appointment with CMW	Check TFT's (TSH/T4/T3). Thyroid stimulating antibodies (TRABS) can be checked at booking or 16 weeks whichever is more convenient. If hypothyroid document current thyroxine dose and ensure compliance. Reassure that thyroxine is safe in pregnancy. All women should have thyroxine dose increased when a pregnancy is confirmed by 25mcg.[2]	CMW/Named Consultant	*If euthyroid:* TFT's are with normal for trimester specific range therefore no action required *If hypothyroid:* Increase thyroxine by 25mcg and check in 2-4 weeks. Aim for a TSH<2.5mU/L. Advise that CMW should liaise with named Consultant who should liaise with GP re thyroxine dose changes *Positive TRABS:* TRABS positive if titre >1.9U/L If positive refer to

Gestation / Situation	Background / Action	Responsible clinician	Recommendation
			Medical Obstetric clinic. *NEGATIVE TRABS:* Continue with CMW and named Consultant
During pregnancy	Check TFT's 6 weekly if stable, check more frequently if further changes to dose (2-4 weeks after dose change) Growth scans are not indicated for this group of patients unless positive TRABS.	CMW/medical team Medical Obstetric clinic	*If euthyroid:* Aim for pregnancy specific ranges for TSH and T4 (table 1) *If hypothyroid:* Aim for TSH <2.5mU/L and T4 16-21pmol/L. Aim for pregnancy specific ranges for TSH and T4 in each trimester (Table 1) Ensure compliance if TSH remains elevated despite medication increase. Consider Medical Obstetric review if patient on high doses of thyroxine (>300mcg). Neonatal Team should be made aware of patients with positive TRABS as there is an increased risk of

Gestation / Situation	Background / Action	Responsible clinician	Recommendation
			neonatal thyrotoxicosis in these babies
Intrapartum	Treat as per pathway		
Postnatal	If on thyroxine patient to return to pre-pregnancy dose prior to discharge. TFT's should be check 6 weeks postnatally by patient's primary care provider. Small risk of flare if inadequate treatment of previous primary hyperthyroidism	GP	Immediate discharge summary to communicate change of dose with GP, patient advised to arrange follow up with GP.

Group C: Those with current hyperthyroidism / thyrotoxicosis:

Gestation	Action	Responsible clinician	Recommendation
Pre-pregnancy	pre-pregnancy review with GP and/or Medical Obstetric Team to ensure compliance with medication and euthyroid	Primary care	

Gestation	Action	Responsible clinician	Recommendation
Booking appointment with CMW	Check TFT's and Thyroid stimulating antibodies (TRABS) at booking then refer to Medical obstetric clinic. Ensure compliance with medication	CMW	Refer to Medical Obstetrics
During pregnancy	Check TFT's 4 weekly Check TRABS 32 weeks. Routine anomaly scan if well controlled High risk anomaly scan if new diagnosis of hypethyroidism in pregnancy, thyrotoxic in pregnancy or high doses of PTU or carbimazole. Growth scans are indicated and fetal goitre and fetal arrhythmias should be considered in patients with positive TRABS, on high doses of PTU/cabimazole or who remain	CMW/named medical team	Ensure compliance. Aim for pregnancy specific ranges for TSH and T4 in each trimester (Table 1). Neonatal Team should be made aware of patients with positive TRABS as there is an increased risk of neonatal thyrotoxicosis in these babies

Gestation	Action	Responsible clinician	Recommendation
	thyrotoxic. Lowest possible maintenance dose of medication should be used and ideally stop medication in third trimester.		
Intrapartum	Hyperthyroidism is not an indication for CS. Treat as per pathway for intrapartum management		
Postnatal	Breastfeeding is contraindicated only with high doses of PTU or carbimazole. TFT's should be check 6 weeks postnatally by patient's primary care provider. Risk of postnatal flare should be explained to patient	GP	Immediate discharge summary to communicate any medications to be restarted or reviewed with GP, patient advised to arrange follow up with GP.

Section 4 – Abbreviations

PTU	propylthiouracil
T4	free T4
TFT's	thyroid function tests
TSH	thyroid stimulating hormone

Section 5 – References

1. Girling J. 2008 Thyroid disease in pregnancy. TOG;10:237-243
2. Abalovich M. 2007 Management of thyroid dysfuntion during pregnancy and postpartum: An Endocrine Society Clinical Practice Guideline. JCEM;92(8):S1-S47
3. Toft A. 2004 Increased levothyroxine requirements in pregnancy – Why, when and how much? NEJM;351(3):292-3.

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