QI Project to Improve Thyroid Function Assessment in Early Pregnancy in Women with Known Hypothyroidism

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Background

- Hypothyroidism possible implications:

- Maternal: period problems, subfertility, miscarriage, pre-eclampsia, hypertension in pregnancy, IUGR, postpartum haemorrhage

- Neonatal: adverse neonatal outcomes, premature birth, low birth weight, neonatal respiratory distress, deafness, three times more likely to have IQ 1 SD below the mean of controls.

- Recommendation from British Thyroid Foundation: As soon as woman is pregnant, GP to:

- Increase levothyroxine by 25-50mcg (30% increase)
  - 25 mcg in those on ≤ 100 mcg
  - 50 mcg in those > 100mcg
- Immediately perform thyroid function tests (TFT) as soon as pregnancy is confirmed
- Refer to endocrine antenatal clinic

- Aim: Review thyroid function assessment in early pregnancy in women with pre-existing hypothyroidism

- Standard: TFT should be performed as soon as women are pregnant (before < 8 weeks gestation) – 75% target

METHODS

- Patients identified from Endocrine Antenatal Clinic
- Retrospective data collection from local clinical softwares: CED, ICE, Astraia
- Duration:
- Initial audit: 1 April to 30 June 2021
- Re-audit: Dec 2021 to Feb 2022

- Sample size:
- Initial audit: 47
- Re-audit: 48

REFERENCES

Thyroid disorders and pregnancy. British Thyroid Foundation. https://www.btf-thyroid.org/thyroid-disorders-and-pregnancy

RESULTS – Initial Audit

- Most women self referred to maternity services within 8 weeks of pregnancy

- 1st TFT

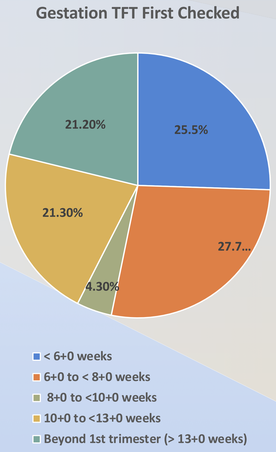
- Only 53.2% had TFT before 8 weeks of gestation, despite 93.6% women having been referred before 8 weeks gestation

- 57.4% had TFT before 10 weeks of gestation

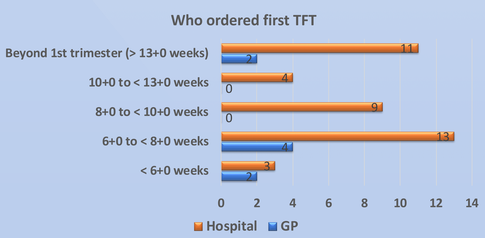
- 78.7% had TFT within 13 weeks of gestation

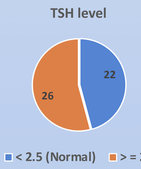
- Screening blood tests: 78.7% within 2 weeks of pregnancy booking line contact

- First TFT in pregnancy: 63 % were ordered by GP

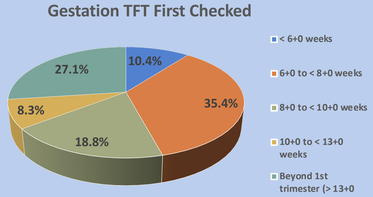


RESULTS – Re-Audit

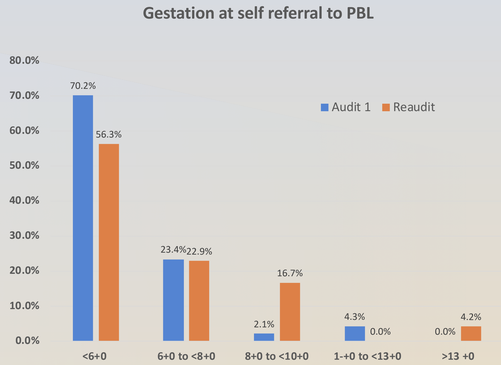


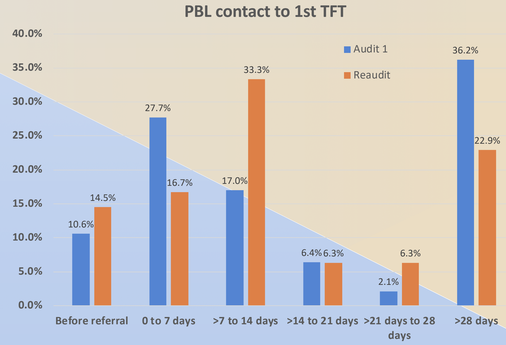


- First TFT in pregnancy: 16.7% were ordered by GP
- Similar number of abnormal blood tests (TSH>2.5)
- Significantly abnormal results (TSH>4) were actioned by hospital consultant to discuss change of dosage and endocrine antenatal clinic appointment expedited



RESULTS - Comparison





1st TFT check			
	< 8 weeks gestation	< 10 weeks gestation	< 13 weeks gestation
Audit	53.2%	57.4%	78.7%
Re-Audit	46%	64.6%	73%

DISCUSSION & CONCLUSION

- Majority of women self referred to maternity services within 8 weeks of pregnancy
- Less patients able to do their TFT before 8 weeks compared to last audit
- However, 20.9% of patients booked after 8 weeks in re-audit (vs 6.4%)
- Probable difficulty to get appointments for blood tests during the Christmas period and rise of Omicron variant cases
- Excluding those who had blood tests before PBL referrals, 58.5% of women will have their TFT within two weeks of PBL contact (vs 50%)
- Significantly abnormal results actioned with the QI project and appointments expedited with endocrinologist
- Understanding of abnormal TFT result in pregnancy - non-pregnant: Upper limit of normal TSH <5.0 mU/L, pregnant: Upper limit of normal TSH <2.5 mU/L
- Preconceptual hypothyroidism control should aim for TSH <2.5 mU/L but GPs will only act if the TSH >5 mU/L
- Only 43.8% had TFT within 12 months before conception
- Among those, 47.6% had TSH <2.5 mU/L (aka only 10 out of the 48 patients)

RECOMMENDATIONS

- Continue with PBL reminding patients to have early blood tests
- Online booking form changes to remind patient to book blood test with GP? So that blood tests can be done earlier with GP (also instructions to state TSH level should be <2.5 mU/L)
- GP teaching:

- Preconception target ranges

- Early testing and changes of levothyroxine dosage