DOES MATERNAL THYROID AUTOIMMUNITY PREDICT ADVERSE PREGNANCY OUTCOMES?

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Background

Previous studies of association between maternal thyroid autoimmunity and adverse pregnancy outcomes have produced inconsistent results. First trimester for chromosomal anomalies is routine in our center and provides an opportunity to test thyroid function and thyroid autoimmunity.

Objective

To examine whether thyroid autoimmunity detected at first trimester screening is predictive of a range of adverse obstetric and fetal outcomes.

Patients and methods

- We studied 438 women with singleton pregnancies who underwent first trimester screening test between June and July 2014. 33 women (7,5%) were excluded because of previous thyroid disease.
- Women were eligible if fetal gestational age was 10-14 weeks from ultrasound crown-rump length measurement.
- We evaluated the association between thyroid autoimmunity [positive TPO and/or Tiroglobulin (TG) antibodies] with:
  1.- Thyroid function: TSH, free T4.
  2.- Adverse obstetric outcomes: pregnancy loss after 20 weeks, pre-eclampsia, cesarean section, preterm birth.
  3.- Adverse neonatal outcomes: small size for gestational age (SGA), metabolic complications, birth defects and neonatal death.

Results

Figure 1:
Women with thyroid autoimmunity

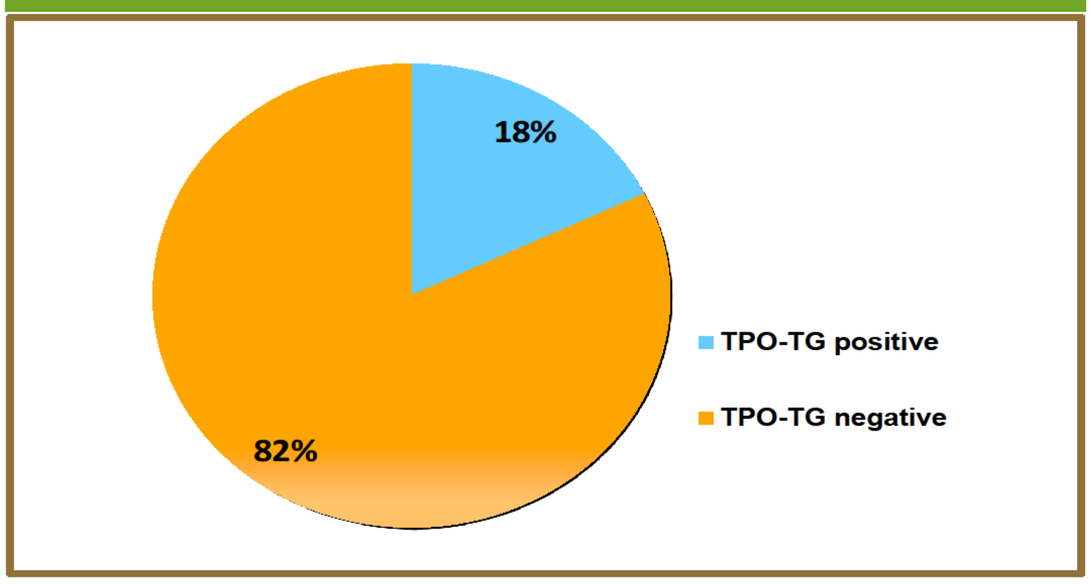

Table 1:
Demographic characteristics, thyroid function and thyroxine treatment in both groups

	TPO-TG positive	TPO-TG negative	p value
Maternal age	31,0 (25,3-35,0)	31,0 (24,0-34,0)	0,750
TSH (mcU/ml)*	1,87 (1,27-2,45)	1,41 (0,93-1,94)	< 0,01
Free T4 (ng/dl)	1,05 (1,0-1,2)	1,06 (1,0-1,2)	0,860
TSH > 97,5 percentile (%) **	12,5	2,1	< 0,001
Thyroxine treatment (%)	8,6	1,1	< 0,01

* Descriptive statistics for continuous variables are median (with lower quartile and upper quartile). ** 97,5 percentile for our specific late-first trimester TSH limit : 3,62 mcU/ml

Table 3:
Adverse neonatal outcomes

	TPO-TG positive	TPO-TG negative	p value
Birth weigth (kg)	3,4 (2,6-3,6)	3,2 (2,7-3,6)	0,697
Male sex (%)	54,4	57,8	0,638
SGA (%)	7,5	9,3	0,689
Metabolic complications (%)	14,2	11,5	0,686
Neonatal deaths (%)	0,0	0,4	0,645
Birth defects (%)	1,8	2,6	0,710
Any neonatal complication (%)	29,8	28,9	0,888

Table 2:
Adverse obstetrics outcomes

	TPO-TG positive	TPO-TG negative	p value
Pregnancy loss after 20 weeks (%)	0,0	1,4	0,349
Pre-eclampsia (%)	3,2	1,1	0,203
Any obstetric complication (%)*	21,3	16,9	0,413
Cesarean section (%)	15,8	19,6	0,502
Gestational age at delivery (weeks)	39,4 (38,5-40,0)	39,4 (38,8-40,0)	0,954
Preterm delivery (%)	12,3	11,1	0,800

* Comprises: pregnancy loss, placenta previa, hypertension, g.diabetes, cesarean s. or preterm d.

Conclusions

Thyroid autoimmunity provides higher risk for mild abnormalities in thyroid function but does not predict adverse obstetrics and neonatal outcomes in our cohort.