



Analysis of thyroid peroxidase antibody in early pregnancy

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ABSTRACT. This study aimed to investigate the thyroid peroxidase antibody (TPOAb) positive rate and how TPOAb affects thyroid function between 7 and 12 weeks of gestation. Six hundred and eleven cases of healthy primipara were enrolled in this study between September 2010 and June 2011, and all of them were given a regular prenatal check in Beijing Friendship Hospital. By detecting the levels of thyroid stimulating hormone (TSH), free thyroxine (FT4), and TPOAb between 7 to 12 weeks gestation, we developed an early thyroid function normal reference interval during pregnancy. Additionally, we analyzed the TPOAb-positivity cutoff value, the positive rate, and the affect of TSH and FT4. We found that the TPOAb median values and changes in the range were 38.9 (6.4-1300+) mU/L. By establishing an 7-12 week gestational-specific reference standard for pregnancy, we set a positive cutoff value of 206.77 mU/L according to the 90th percentile TPOAb. The TPOAb positive rate was 10.8% (66/611). Regression analysis showed that, during gestation between 7 and 12 weeks, the titers of TPOAb and TSH correlate positively and negatively with FT4, $\beta = 1.406$ and 0.820 , respectively [95%CI (1.349-1.413, 0.805-0.835), $P = 0.000$]. Pregnant TPOAb positive women are more likely to suffer

from markedly increased TSH levels, with increased risk being 3-4-fold greater than in a normal pregnancy.

Key words: Early stage of pregnancy; Thyroid peroxidase antibody; Gestational age-specific thyroid function reference interval