INVITED COMMENTARY

Prediction of postpartum thyroiditis

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Postpartum thyroid dysfunction (PPTD) is characterised by transient hyperthyroidism occurring about 14 weeks postpartum, followed by transient hypothyroidism that presents at 19 weeks (1–3). Hyper- or hypothyroidism may occur alone. The condition, a destructive thyroiditis, predominantly occurs in patients with positive titres of thyroid peroxidase (TPO) auto-antibody (the microsomal antibody) seen in 10% of women at approximately 16 weeks gestation (4). The titre of these antibodies is known to decrease during gestation, but increases dramatically in the postpartum period (5). However, only about 50% of women found to be TPO antibody positive during pregnancy will develop PPTD. Some cases of PPTD have occurred in the absence of TPO antibodies, suggesting a non-immune cause, which is, as yet, unknown. Although the clinical manifestations of the hyperthyroid state are not usually severe, the same cannot be said for the hypothyroid condition that may be evident clinically and responds to thyroxine. In addition, there is evidence that, in 25–30% of hypothyroid postpartum women, the hypothyroidism becomes permanent after 1 year (6) and there is a further development of thyroid dysfunction in those women who were initially euthyroid after a transient attack of PPTD (7). Despite these facts, PPTD has not been as widely recognised as it might have been (8), and the clinical symptomatology has been considered to be mild. The condition has been described in many countries and has been reviewed (9, 10). Most reports have described relatively small numbers of patients who were followed over short periods of time. This has created a problem in defining the incidence of the condition, although it is now accepted that it occurs in 5–9% of women during the first 1 year postpartum (11). There is also evidence that the presence of TPO antibodies, detected in the first trimester, is associated with a greater incidence of postpartum depressive symptomatology, independent of thyroid function (12, 13).

Because of the clinical associations of TPO antibodies in the setting of pregnancy, it is important to assess formally the predictive value, as a screening test, of measuring these antibodies during pregnancy. Kuijpers *et al.* (14) report, in this issue of the *European Journal of Endocrinology*, the findings of their study in which they examined this question by looking at the timing of TPO antibody testing and investigating whether other putative determinants of PPTD could improve the

predictive power of TPO antibody. In this prospective study of 310 women, 291 were analysed and, interestingly, of 15 women with PPTD, only 10 had TPO antibodies. A high titre of TPO antibodies was found at 12 weeks gestation, and similar values were noted during the postpartum period. The well-known decrease in antibody titre during gestation was also confirmed. The authors concluded that the predictive value of measuring TPO antibodies as a screening procedure during gestation was 0.38–0.80 (depending on the timing of testing) and increased slightly when smoking habits were taken into account. Thus, in their hands, a maximum of 67% of cases of PPTD can be predicted by the presence of TPO antibodies in gestation. As noted above, however, only 50% of TPO antibody positive women develop thyroid dysfunction postpartum, making the potential predictive power of TPO antibody for the total number of PPTD cases about 33% (taking into account the antibody negative patients).

An important clinical question, which has significant health care cost implications, is whether women should be routinely screened antenatally for TPO antibodies, as previously suggested (15, 16). A cost-benefit analysis must take into account many factors, including the crude financial costs, the potential for inducing maternal anxiety about yet another antenatal screening test, and the evidence that any intervention resulting from the test would affect outcome. Although some of these questions have not been answered to the satisfaction of all (17), there are good data indicating the natural history of autoimmune PPTD (18). Considerable morbidity may result from unrecognised transient hypothyroidism, which is increased if the condition becomes permanent. It is quite probable that targeting those 10% of women who are TPO antibody positive antenatally, to receive postnatal thyroid evaluation, will be cost effective when quality of life analysis is considered. However, in order to improve the predictive value of the antibody test other measures such as serum thyroglobulin estimation (19), ultrasonic determination of thyroid volume (20) and assessment of TPO activation of complement (21) have been proposed. In addition, screening for TPO antibodies may be useful as a potential marker of impaired child development (22). A further prospective trial is indicated to build on the findings of Kuijpers and his colleagues.

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