THYROID FLYER

Newsletter of Thyroid Australia Ltd — Volume 6 No 2 September 2005

Inside — Page

FEATURE:

Autoimmune Thyroiditis and Pregnancy 1
Pregnancy and Fertility 4
A Long Road 6
When is this mightmare going to end 8
Sue's Story

Ethos of Thyroid Down Under Mate! 10
Refrigeration of Thyroxine: Further Developments 12
Telephone Contacts 15
Meetings 15

Mother and Child

Information Day

Sunday 2 October
Camberwell Civic Centre
9.00am to 4.30pm

Fully Catered

Full Conference Documentation

Easy Public Transport

Plenty of Parking

$45 for members
$50 non-members

Speakers

Dr Christine Rodda: The impact of thyroid disease on the baby during pregnancy and post partum.

Prof Duncan Topliss: The impact of thyroid disease on the mother during pregnancy and post partum.

Dr Richard Arnott: Understanding thyroid tests.

Dr Robert Hanner: Diet and nutrition in relation to hypo- and hyperthyroidism.

Our conference this year aims to provide good practical information for everyone on the two most common issues raised - namely thyroid testing and diet. It also focuses on the very important problems of the impact of thyroid disease on mothers and their babies. Come along and hear excellent speakers in their fields - and ask them those questions you have been dying to ask.

Call to book on **03 9888 2588** or email at **support@thyroid.org.au**

Autoimmune Thyroiditis and Pregnancy

By **Alex F Muller and Arie Berghout**

1. Introduction

Thyroiditis is characterised by thyroid inflammation.[1] Such inflammation can be due to several causes notably autoimmunity. However, other factors involved are radiation, trauma, micro-organisms and environmental factors (e.g. Iodine).[1] Thyroid autoimmune disorders can have marked influence on the chances of successful conception, on the course of pregnancy itself and on the postpartum period. On the other hand, pregnancy has a profound influence on the expression of thyroid autoimmune disorders.

2. Thyroid antibodies and pregnancy loss

2.1 Background

As the human fetus expresses huge amounts of paternal histocompatibility antigens it can be easily understood that pregnancy has a profound effect on the immune system of the mother. Indeed, in pregnancies in which these immune adaptations are impaired there is an increased prevalence of miscarriage.[2] During pregnancy several mechanisms converge which collectively downregulate the cytotoxic/cytolytic arm of the cell-mediated immune system.[3] First, the trophoblast expresses a special paternally imprinted MHC-class I molecule called HLA-G which may serve as a ligand for the natural killer (NK) cell receptor thus deviating a NK cell attack away from the fetus.[4] Second, under the influence of corticotrophin releasing hormone the expression of apoptotic Fas ligand (FasL) on trophoblast and maternal decidual cells at the fetal-maternal interface is stimulated. The apoptosis of activated T lymphocytes through FasL induction is also stimulated by corticotrophin releasing hormone. Thus at the placental level activated maternal lymphocytes are more likely to die through apoptosis (cell suicide). Taken together these processes increase the likelihood of successful implantation and early pregnancy tolerance.[5]

Besides adaptations at the local feto-maternal level, more systemic adaptations take place as well. These systemic adaptations are at least in part regulated by the local production of progesterone, estrogen and hCG.[2,6,7] Collectively, these hormones redirect maternal immunity away from the damaging T-helper subset 1 (TH1) cell-mediated immunity toward humoral T-helper subset 2 (TH2) mediated immunosuppression.[3]

2.2 Spontaneous pregnancy loss in unselected pregnancies

Stagnaro-Green et al studied 552 consecutive euthyroid women in the first trimester of pregnancy and found that the presence of thyroid peroxidase (TPO) and/or thyroglobulin (Tg) antibodies in the first trimester of pregnancy is a risk factor for spontaneous fetal loss (17% vs. 8.4% in controls).[8] These results were confirmed by Glinoer et al. who found a higher rate of spontaneous abortion in 45 euthyroid women with thyroid autoantibodies compared to 603 controls: 13.3% vs. 3.3%.[9] Since then several other reports have lend further support to the notion that the presence of thyroid antibodies – most notably anti-TPO antibodies are associated with spontaneous pregnancy loss [10-12] (Figure 1).

In a prospective study of 54 euthyroid women who conceived after in vitro fertilization (IVF) we were unable to find a significant association between the spontaneous abortion rate and the presence of TPO antibodies before pregnancy. Although miscarriages occurred in 33% of TPO antibody positive women and in only 19% of the TPO

Continued Page 2

Thyroid Australia

MEMBER BENEFITS

Full access to Thyroid Flyer is restricted to paid up members of Thyroid Australia.

Thyroid Australia's services are funded by membership fees and donations from individual members of the public.

Membership is not expensive and your money goes towards the costs of maintaining and hosting this site, staffing our office, producing our newsletter and researching thyroid problems and treatments.

Please visit the About Us section of our web site for details of how you can join Thyroid Australia and help us help others just like you.