

Chapter 14 – THYROID REGULATION AND DYSFUNCTION IN THE PREGNANT PATIENT

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ABSTRACT

Thyroid disease in pregnancy is a common clinical problem. During the past 2 years significant clinical and scientific advances have occurred in the field. This chapter reviews the physiology of thyroid and pregnancy focusing on iodine requirements and advances in placental function. There follows discussion on thyroid function tests in pregnancy and their interpretation noting ethnic variation in pregnancy range. Sections on iodine nutrition, thyroid autoantibodies and pregnancy complications, thyroid considerations in infertile women, hypothyroidism in pregnancy, thyrotoxicosis in pregnancy, thyroid nodules and cancer in pregnant women, fetal and neonatal considerations, thyroid disease and lactation, screening for thyroid dysfunction in pregnancy will inform the reader of the current information on these areas. Postpartum thyroid disease is also discussed. Current topical fields of importance include the role of isolated hypothyroxinemia on obstetric outcomes and neurodevelopment, the influence of thyroid autoantibodies on the same parameters and the effect of recent data on malformations associated with antithyroid drug therapy on management guidelines for thyrotoxicosis in pregnancy. It also seems as if pregnancy may have a deleterious effect on the progression differentiated thyroid cancer in pregnancy; this requires more confirmation. The intense debate on whether to screen for thyroid function in all pregnant women continues. Although the few randomised trials which have been performed are negative several areas of the world and some clinics in USA recommend screening. In general recent guidelines from USA and Europe find no evidence to support routine screening.

INTRODUCTION

During the past 3-4 decades there has been a major expansion of our knowledge regarding thyroid disorders associated with pregnancy... Thyroid disorders are common. The prevalence of hyperthyroidism is around 5 per 1000 and hypothyroidism about 3- 10 per 1000 in women. As the conditions are generally much more common in the female it is to be expected that they will appear during pregnancy. Developments in our understanding of thyroid physiology (1,2) and immunology (3) in pregnancy as well as improvements in thyroid function testing (4) have highlighted the importance of recognizing and providing appropriate therapy to women with gestational thyroid disorders (5). There has been much discussion and many publications on the optimal management of pregnant women who are hyper or hypothyroid(6,7). In addition, the impact of iodine deficiency on the mother and developing fetus(8), the adverse effects of maternal hypothyroidism on mental development in their offspring(9), the clinical importance of postpartum thyroiditis(10) have all been reviewed .. The field has advanced rapidly so that the evidence based guidelines on thyroid and pregnancy published in 2007 (11) are now being replaced with 4 further updated documents ; two from The American Thyroid Association (12,13) one from The American Endocrine society (14) and one from The European Thyroid Association(15) all with continuing international representation.