

The Physiological Effects of Thyroid Disorders During the Gestatory Period on Fetal Neurological Development: A Descriptive Review

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Abstract : The gestational period is a phase in which the pregnant woman undergoes constant physiological and hormonal changes, which are part of the woman's biological cycle, the development of the fetus, childbirth, and lactation. These are factors of response to the immunological adaptation of the human reproductive process that is directly related to the pregnancy's well-being and development. Although most pregnancies occur without complications, about 15% of pregnant women will develop potentially fatal complications, implying maternal and fetal risk. Therefore, requiring specialized care for high-risk pregnant women (HRPW) with obstetric interventions for the survival of the mother and/or fetus. Among the risk factors that characterize HRPW are the women's age, gestational diabetes mellitus (GDM), autoimmune diseases, infectious diseases such as syphilis and HIV, hypertension (SAH), preeclampsia, eclampsia, HELLP syndrome, uterine contraction abnormalities, and premature placental detachment (PPD), thyroid disorders, among others. Thus, pregnancy has an impact on the thyroid gland causing changes in the functioning of the mother's thyroid gland, altering the thyroid hormone (TH) profiles and production as pregnancy progresses. Considering, throughout the gestational period, the interpretation of the results of the tests to evaluate the thyroid functioning depends on the stage in which the pregnancy is. Thyroid disorders are directly related to adverse obstetric outcomes and in child development. Therefore, the adequate release of TH is important for a pregnancy without complications and optimal fetal growth and development. Objective: Investigate the physiological effects caused by thyroid disorders in the gestational period. Methods: A search for articles indexed in PubMed, Scielo, and MDPI databases, was performed using the term "AND", with the descriptors: Pregnancy, Thyroid. With several combinations that included: Melatonin, Thyroidopathy, Inflammatory processes, Cytokines, Anti-inflammatory, Antioxidant, High-risk pregnancy. Subsequently, the screening was performed through the analysis of titles and/or abstracts. The criteria were: including clinical studies in general, randomized or not, in the period of 10 years prior to the research, in the English literature; excluded: experimental studies, case reports, research in the development phase. Results: In the preliminary results, a total of studies (n=183) were found, (n=57) excluded, such as studies of cancer, diabetes, obesity, and skin diseases. Conclusion: To date, it has been identified that thyroid diseases can impair the fetus's brain development. Further research is suggested on this matter to identify new substances that may have a potential therapeutic effect to aid the gestational period with thyroid diseases.

Keywords : pregnancy, thyroid, melatonin, high-risk pregnancy

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