

Effect of endocrine disorders on fertility and fetal and maternal obstetrical outcomes

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Context: Suboptimal endocrine functions can lead to infertility or adverse perinatal outcome.

Objective: To determine the prevalence and effect of endocrine diseases on fertility and pregnancy outcomes in our tertiary care university department.

Methods and patients: Retrospective data collection using the data base of the Hungarian National Health Care Providing Center and the Delivery Log Books of the Department of Obstetrics and Gynecology, Faculty of Medicine, University of Debrecen, Hungary. 10,687 deliveries between the years 2012 and 2015 were included in the study. Student's t-test and chi2 test were used for statistical analysis.

Main outcome measures: prevalence and association of endocrine diseases in pregnancy, frequency of use of assisted reproductive techniques (ART), obstetrical and neonatal outcome measures (preterm delivery rate, congenital malformations, fetal birth weight, macrosomy or IUGR, cesarean section rate, multifetal gestation and seasonality of deliveries) were determined.

Results: 798 patients (7.5%) received treatment with at least 1 endocrine disease, 7% of whom had 2 or more endocrine disorders. The most common endocrine disorders were gestational diabetes mellitus (GDM, 54%) and hypothyroidism (38%), but several other diagnoses were found: type 1 and 2 pregestational diabetes, polycystic ovarian syndrome (PCOS), Addison's disease, premature ovarian insufficiency (POI), hyperprolactinaemia and diabetes insipidus. Hypothyroidism was common in carbohydrate metabolism disorders, its prevalence being 8-19-33-67% in GDM-T1DM-T2DM-PCOS patients, respectively. ART was common in endocrine patients in general (3.6%) and in hypothyroidism (5%) in particular. T1DM was associated with the highest preterm labour (46%) and cesarean section (69%) rate. Twin pregnancy was not common in endocrine patients (3.4%). Congenital malformation rate was 2.25% in the endocrine patient population, similar to the rate in T1DM patients (2.3%). Seasonal distribution of deliveries was uneven in PCOS patients, with 63% of patients delivering during the winter and spring.

Conclusions: A high proportion of pregnancies is associated with endocrine disorders. Depending on the endocrine diagnosis, other specific endocrine diseases should be searched for and preparation for perinatal complications should be made. Seasonal distribution of the deliveries of PCOS patients may indicate the significance of sunshine and vitamin D at the time of conception.

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