

Keywords: Exposome; Pregnancy; Oxidative stress; Inflammation; Diet; Placenta

Introduction

Dietary therapies generally pose little danger during pregnancy and might be viewed as an effective therapeutic strategy [1]. Every person's lifelong health depends critically on the perinatal period [2]. Unfavourable prenatal conditions include elements that increase the likelihood of later-life chronic illness [3]. Placental dysfunction and poor prenatal outcomes have all been associated with, for example, diabetes, hypertension, stroke, and coronary artery disease [4]. These "major obstetrical syndromes," which include preeclampsia, foetal growth restriction, and premature labour, have common aetiologies [5]. These disorders all have a protracted subclinical phase that only manifests when pregnancy reaches the point when the body's defence mechanisms are no longer able to support them [6]. They are all highly correlated with the growth and functional development of the placenta [7]. A window of opportunity for potential actions to prevent the later emergence of overt symptoms exists during this subclinical stage [8].

The word the term "great obstetrical syndromes" was initially used to refer to conditions that affect pregnancy and include a placental component to their pathogenesis [9]. Preterm labour and premature membrane rupture, preeclampsia, spontaneous miscarriage, stillbirth, and abnormal foetal growth are all referred to as GOS. Around 15% of all pregnancies are complicated by GOS, most of them with a significant recurrence risk. GOS is continuously increasing globally [10].

Discussion

The main idea is that these aetiologies are caused by things that happen during foetal development that affect how nutrients, oxygen, waste products, and toxins are exchanged between the mother and the foetus. These things start subclinical pathology that develops into clinical manifestation over the course of pregnancy. As a result of several exposome variables, these occurrences involve exposure to endogenous metabolites and exogenous nutrients. In order to define the exposome, all internal, non-genetic elements that affect a person's health during the course of their life, especially during pregnancy. These determinants may be split into three categories: internal (hormones, inflammation, and oxidative stress), specific external (infectious agents, food, and lifestyle), and general external (education, socioeconomic position, and mental load). The growing baby is exposed to a variety of endo- and echo-exposome variables throughout pregnancy, most

notably oxidative stress, nutrition, and inflammation. Gestational diabetes mellitus is one example of a pregnancy problem when the exposome is active. GDM is a metabolic condition that manifests as

oxidative stress and oxidative stress feeds an ongoing inflammatory response; the two concepts are tightly connected. Increased oxidative stress and a greater risk of unfavourable pregnancy outcomes may be the results of immunological responses triggered by inflammation that shift immune tolerance in the direction of immune effector activation. It is still unknown how exactly oxidative stress and inflammatory processes contribute to the beginning and development of pregnancy problems. However, these mechanisms' contribution to the disease of It is important to consider oxidative stress as an endogenous component that is a part of endo-exposome oxidative stress. In general, pregnancy is a physiological condition of protracted, modestly enhanced oxidative stress because of the foetal growth and development's high oxygen metabolic requirements. The physiological inflammatory phenomena of pregnancy that is necessary for the angiogenic processes required to increase the placental vascular bed have led to this modestly heightened oxidative stress. Superoxide anion hydrogen peroxide, hydroxyl radical NO, and Peroxynitrite are examples of common ROS and RNS products that are produced from oxygen. In cellular metabolism, cell signalling cascades, and gene expression under physiological circumstances, ROS and RNS play critical roles. During pregnancy, oxidative stress is brought on by an increase in the placenta's mitochondria's metabolic activity and an excess of ROS.

Acknowledgement

None

Conflict of Interest

None

References

1. Banhidly F, Lowry RB, Czeizel AE (2005) Risk and benefit of drug use during pregnancy. *Int J Med Sci* 2: 100-106.
2. Deborah E, McCarter, Spaulding MS (2005) Medications in pregnancy and lactation. *MCN Am J Matern Child Nurs* 30: 10-17.
3. Ward RW (2001) Difficulties in the study of adverse fetal and neonatal effects of drug therapy during pregnancy. *Semin Perinatol* 25: 191-195.
4. Hansen W, Yankowitz J (2002) Pharmacologic therapy for medical disorders during pregnancy. *Clin Obstet Gynaecol* 45: 136-152.
5. Loebstein R, Lalkin A, Koren G (1997) Pharmacokinetic changes during pregnancy and their clinical relevance. *Clin Pharmacokinet* 33: 328-343.
6. Sharma R, Kapoor B, Verma U (2006) Drug utilization pattern during pregnancy in North India. *J Med Sci* 60: 277-287.
7. Andrade SE, Gurwitz JH, Davis RL, Chan KA, Finkelstein JA, et al. (2004) Prescription drug use in pregnancy. *Am J Obstet Gynaecol* 191: 398-407.
8. Splinter MY, Sagraves R (1997) Prenatal use of medications by women giving birth at a university hospital. *South Med J* 90: 498-502.
9. De Jong LT, Van den Berg PB (1990) A study of drug utilization during pregnancy in the light of known risks. *Int J Risk Safety Med* 1: 91-105.
10. Briggs GG (2002) Drug effects on the fetus and breastfed infants. *Clin Obstet Gynaecol* 45: 6-21.