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Mini Review

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Determining the Necessary Amount and Dosage of Using Antioxidants in the Pregnant Women with Obesity to Prevent Adverse Outcomes Arise from Oxidative Stress

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Normal gestational development depends on adequate nutrients and oxygen transportation in the circuit of mother-placenta-fetus. In the obese mothers, fetal growth alterations and increased risk of Large for gestational age delivering are relevant to excess in the nutrient supply. Obese mothers have also an increased risk for Small for gestational age deliveries. Small for gestational age and Large for gestational age are associated with perinatal complications like stillbirth and later complications during life span. Placental overgrowth along with increased amounts of nutrients and oxygen flux, would result in Large for gestational age newborns which during the life span, such Large for gestational age children would present themselves with more Oxidative stress and Insulin resistance in comparison with Appropriate for gestational age children.

Reactive oxygen species generating systems overactivity and Antioxidant defense depletion would result in the occurrence of Oxidative stress in the accumulation of fat mass in the obese mothers. This Oxidative stress would result in the increased risk for various adverse outcomes like Reduced fertility, Intrauterine growth retardation, Embryo malformations, Spontaneous abortion, Preeclampsia and Small or Large for gestational age deliveries.

Although there are various evidences for the role of Oxidative stress in causing different abnormalities in such pregnancies, there are conflicts about using antioxidants in these cases specifically in the clinical settings.

Studying about the obese pregnant women with Pregestational obesity with basal condition of having increased Oxidative stress can be promising. Also studying about using antioxidants in the obese pregnant women can result in finding the necessary amount and dosage of using such antioxidants to target Oxidative stress in a way to prevent complications which can arise from such stress.

Target Groups

- Pregnant women with obesity
- Pregnant women with pregestational obesity

Method

After selecting the target groups, different strategies to prescribe Antioxidants can be used which the dosage and route of administration should be defined based on the women's age, their basal metabolic state considering the existence of any concomitant metabolic disorders, the existence of any gastrointestinal pathologies which may interfere with the food and medications absorption, the presence of any kidney of liver diseases and the age of the fetus and the presence of any abnormalities etc.

After the pregnancy the newborn can be evaluated in different periods and at certain times to determine if there would be any abnormalities present in comparison with defined control groups - case control study - or the documents of the similar groups with abnormal children in the past - retrograde study [1-6].

Inclusion Criteria

- Pregnant women with obesity
- Consent to participate in the study

Exclusion Criteria

- The presence of any gastrointestinal, liver or kidney diseases which may interfere with the absorption of the Antioxidants
- The presence of any hypersensitivity to Antioxidants
- Appearance of any condition which may interfere with continuation of administering the Antioxidants both in the mothers or the fetuses

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