Modifiable lifestyle factors are associated with risk of gestational diabetes mellitus


Gestational diabetes mellitus (GDM) causes foetal macrosomia, and is associated with congenital anomalies. Women with gestational diabetes mellitus are also at an increased risk of developing hypertension, pre-eclampsia and developing type 2 diabetes mellitus after pregnancy. Children of GDM pregnancies are also at a higher risk of developing diabetes later in life. Do lifestyle factors influence the risk of developing GDM? A large prospective cohort study has found that maintaining a healthy lifestyle before pregnancy is associated with a significantly lower risk of developing gestational diabetes mellitus.

The study was based on the Nurses’ Health Study II, a prospective cohort that was established in 1989. Conducted in the U.K., the study recruited 116,671 female nurses aged 24-44. Data was collected using questionnaires, at regular intervals, on a variety of lifestyle factors. A low risk group was defined as those having the following lifestyle factors - a healthy body weight, adherence to a healthy dietary pattern, regular exercise, and abstinence from cigarette smoking. Each lifestyle variable was carefully defined and scored. A healthful diet meant higher intakes of vegetables, fruit, nuts, whole grains, polyunsaturated fatty acids, and long chain omega 3 fatty acids and lower intakes of red and processed meats, sugar sweetened beverages, trans-fats, and sodium. Physical activity included time spent walking to work or otherwise, aerobic exercise and other recreational activities. The outcome of interest was incident gestational diabetes.

After ten years follow-up, 20136 singleton pregnancies had occurred in 144,437 women. There were 823 pregnancies affected with GDM. There was significant and independent association between each lifestyle factor assessed and the risk of developing GDM. Women with a healthy body weight (BMI <25 kg/m², who had a healthy diet, did not smoke and exercised regularly (> 150 min/week of moderate to vigorous physical activity) had an 83% lower risk of GDM (RR 0.17, 95% CI:0.12-0.25) when compared with those with the lowest lifestyle scores (who met none of the healthy lifestyle criteria). The incidence of GDM in women with the healthiest lifestyles was 52% lower compared with all other pregnancies (RR 0.48, 95% CI:0.38-0.61). The associations remained after adjustment for other risk factors like increasing maternal age, high parity, and family history of diabetes.

The results were similar to the Nurses’ Health Study done in 2001 which found that 91% of cases of diabetes could be attributed to poor lifestyle factors. This large cohort study has shown that the incidence of GDM is significantly associated with lifestyle factors before pregnancy. These factors are modifiable – thus promoting a healthy lifestyle among women by advising moderate physical activity, eating a healthful diet and advising against smoking can result in much greater benefit than managing the consequences of a poor lifestyle. Such modification could also reduce or delay the maternal long term risks for type 2 diabetes and possibly avert similar risks in their offspring.

A realist is an idealist who has gone through the fire and has been purified. A skeptic is an idealist who has gone through the fire and has been burnt.

Warren Wiersbe in Leadership