

## Studies in Pregnant Women for Gestational Diabetes Mellitus (GDM)

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The challenge of diabetes during pregnancy is more delicate and greater than ever and health care professionals are facing it at all levels in the developing countries. There are no large-scale epidemiological studies available to define the magnitude of the problem in India. Indirectly, however, one can conjecture the potential magnitude. An urban diabetes survey in 1992 indicated a prevalence of 2.6% for diabetes mellitus and 9.9% for impaired glucose tolerance among reproductive women aged 20 to 34 years (Seshiah and Balaji, 2002); Interestingly, despite the highest pregnancy rates in India the only published report in this regard document 1.19% prevalence rate of diabetes among pregnant women (Kochupillai, 2002).

Hadden reviewed the historical aspect of GDM and summarized that the first case of pregnancy in a patient with diabetes mellitus was published in 1824, which ended in the death of a 12 lb. infant. The pregnant woman with diabetes had suffered from intense thirst and polyuria during three successive pregnancies and her urine had two ounces of saccharide matter per pound, which taste like beer but was much sweeter (Hadden, 1998).

Matthews Duncan compiled the first published series about diabetes in pregnancy in 1882. He collected 22 pregnancies in 15 women, most of whom apparently had gestational diabetes and reported different hazardous effects on maternal and fetal outcome. The first to describe gestational diabetes, he noted; "diabetes may occur during pregnancy, being absent at other times," and "diabetes may cease with the termination of pregnancy, recurring some time afterwards." He made the clear distinction that there was something about the state of pregnancy responsible for the appearance of diabetes, rather than mere existence of the two

conditions, and thus titled his paper "On Puerperal Diabetes." (Duncan, 1882).

Even as late as 1922, Joslin, an early pioneer in the treatment of diabetic pregnancy could describe only 108 cases of diabetic pregnancy with a perinatal mortality rate 44% (Joslin, 1928). Thus from this statistics it appears that before the discovery of insulin in 1921, pregnancy in patients with diabetes mellitus was rare because many women of reproductive age died 1 to 2 years after the onset of the disease. Also, the perinatal mortality rate was approximately 65% in the diabetic pregnant woman. Since the discovery of insulin, the hormone has played an important role in improving the outcome of diabetic pregnancies for both the mother and fetus.

When diabetes and pregnancy co-exist, a special system of classification, originally developed by Priscilla White has often been employed (White, 1937). This system, based upon the theoretical likelihood of vascular disease, has been used in predicting the outcome of pregnancy in a diabetic individual and in individualizing medical and obstetric care. However, as modern concepts of care for high risk pregnancies have evolved, resulting in improved outcome in diabetic pregnancies, the differences among White classes have become less distinct so that the major value of this system now lies in its use in comparing the severity of diabetes among different published series.

### Classification of diabetes mellitus in pregnancy: (Seshiah and Balaji, 2002)

Probably all the diabetic pregnancies described in the 19<sup>th</sup> and 20<sup>th</sup> centuries involved women either with gestational diabetes mellitus or what we now designate a type II diabetes mellitus. In 1980, Gabbe compiled six decades of experience of management of diabetes in