Research Paper :

Prevalence and nutritional status of pre-gestational and gestational diabetes in Guntur

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ABSTRACT

The subjects selected for the study were all Pre GDM and GDM patients between the age group of 18 to 47 years attending the five different gynaec and diabetic clinics. The study was conducted on a total number of 1935 pregnant women, of whom 20 were Pre GDM and 43 GDM patients. The prevalence of Pre GDM and GDM was 3.25%. A questionnaire was designed to collect the information regarding background of patients, family history and clinical history. Anthropometry included measurement of height, weight. Diet history was collected using 24 hr recall and food frequency. Data revealed that a majority of subjects were between 38-47 years of age. The onset of disease was noticed between 40-45 years. The symptom of frequent thirst and urination was more common. Many reported family history of diabetes from parent's side. Fasting blood sugar level of >120 mg/ dl was reported by majority of subjects. The incidence of anemia was more in Pre GDM. Among associated risk factors, eye and heart problems were predominant. Anthropometry of patients revealed that 15% (Pre GDM) and 28% (GDM) of patients were in normal range of BMI, 40% (Pre GDM) and 37.2 % (GDM) were over weight and 45 (Pre GDM)) and 18.6% (GDM) were obese. Diet survey showed the intake of carotene, iron, vitamin C, niacin and riboflavin to be inadequate and that of calcium, fat and thiamine to be adequate.

Key words : Hyperglycemia, gestational period, Anthropometry, Biochemical parameters, Dietary intake.

Diabetes mellitus is a clinical syndrome characterized by hyperglycemia and disturbances of carbohydrate, fat and protein metabolism that are associated with absolute or relative deficiencies in insulin action and/or insulin secretion. Although it is an endocrine disease in origin, its major manifestations are those of a metabolic disease (WHO, 1994). The metabolic derangement is frequently associated with permanent and irreversible functional and structural changes in the cells of the body, those of the vascular system being particularly susceptible. The changes lead in turn to the development of well-defined clinical entities, the complications of diabetes, which characteristically affect the eye, the kidney and the nervous system (Davidson, 1991).

Diabetes mellitus is on the increase world wide as many countries are achieving greater affluence and as their populations are growing grays. If 25% of the adults coming to health centers meet the WHO criteria for diabetes mellitus, there would be millions in the world who may suffer from eventual complications of the disease. The prevalence of diabetes in several parts of India has shown an increasing trend in the past 15 years. The increase in the prevalence is probably as a result of changing life styles. Prevalence of diabetes is high in the urban Indians and similar to the values reported in migrant Indians in different countries (Ramachandran, 2000).

Many factors contribute to the onset of diabetes and these are termed as predisposing or risk factors. Environmental factors such as diet, obesity and sedentary life style increase the risk of diabetes (Zimmet *et al*., 2001). Other important risk factors include high familial aggregation, insulin resistance, nutritional status, age, life style changes due to urbanization etc. (Ramachandran, 2000). Complications of diabetes are several. There is always the hazard of acute complication of ketoacidosis, which is dangerous but treatable medical emergency. Hypoglycemia and infections are other acute complications. Most investigators have suggested that the rise in Type 2 diabetes in urban population may have been triggered by mild obesity in mothers leading to glucose intolerance during pregnancy, macroscopic changes in the fotus, and insulin deficiency in adult (Dornhost and Rosi, 1998, Fall *et al.,* 1998, Yajnik *et al.,* 1995, Yajnik, 2003). Yajnik (2003) had reported that high prevalence of Type 2 diabetes and IGT in Indians may be linked to poor fetal growth. There is a possibility that Type 2 diabetes may be programmed in fetal life due to changes in intrauterine milieu interior. This may be due to nutritional deprivation or one of nutritional plenty. It leads to changes in pancreatic development and peripheral response to insulin