



ORIGINAL ARTICLE

Prevalence of Gestational Diabetes Mellitus in Low risk pregnant women in the city of Bandar Abbas on April 2012 to October 2013

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ABSTRACT

Gestational diabetes Mellitus (GDM) is a common disorder that without screening would have remained undiagnosed and may result in hazardous consequences both for mother and neonate. Screening for GDM is still a matter of dispute and there is no consensus as yet regarding the screening of GDM.. Therefore the main objective of this study was to determine prevalence of GDM in low risk pregnant in women referred to selected health center of Bandar Abbas on March 2012 to September 2013. This was a cross Sectional study in which , the number of 1800 low risk pregnant women for GDM in during the first visit were investigated. During this visit, after obtaining the history and complete physical exam questionnaire was completed, all pregnant women to low risk of gestational diabetes was selected as the study group and for the glucose challenge test with 50 g glucose at 24-28 weeks of gestation age. If blood glucose was ≥ 130 mg/dl, two-hour glucose tolerance test by 75 g glucose requested. GTT was done according to International Association of Diabetes and Pregnancy Study Groups (IADPSG) criteria. The data were analyzed by SPSS and statistical analysis was performed using T and Chi square test. The results indicate that the prevalence of gestational diabetes in pregnant women at low risk of Bandar Abbas 3.4% (61 of the 1,800 patients studied had impaired oral glucose tolerance test). There is a significant relationship between GDM and location. According to this study, and high prevalence gestational diabetes mellitus in lowrisk pregnant it is suggested that the selective screening of pregnant women will do not detected most cases of GDM. Therefore, routine screening in low-risk women to be taken seriously.

Key words: Prevalence of diabetes, pregnancy, routine screening, low risk pregnant women

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INTRODUCTION

Diabetes mellitus word is a description of several diseases with abnormal carbohydrate metabolism that is characterized by hyperglycemia and it is related with partial and complete disorder in insulin secretion with variable degrees of peripheral resistance against insulin activity[1]. Gestational diabetes is glucose intolerance with variable degrees that starts or when diagnosed for the first time during pregnancy[2]. and it is estimated about 5% of all pregnancies will be complicated by this in the USA[3]. During pregnancy glucose intolerance is more. Insulin resistance is related with metabolic changes during ends of pregnancy and increased need for insulin lead to glucose intolerance[4]. Gestational diabetes prevalence is different in different countries and races. In the USA gestational diabetes prevalence is more in african-american race, spanish-american race, native american and asian [5]. Also prevalence of gestational diabetes is different according to the diagnostic criteria and test methods[6]. It is increased with aging and weight gain[7]. The purpose of screening is to find asymptomatic patients. Screening usually has 2 steps as in the first step we find people at risk and in the second step we do definitive diagnostic test. Because of expensive diagnostic test we don't do this test for low risk people. Universal screening of gestational diabetes for pregnant women is one of the important issues in the world. In the forth international ADA and GDM conference it was recommended that routine screening may not be affordable for low risk pregnant women [8]. but it appears universal screening is

favorable because it identifies 90% of pregnant women are at risk during pregnancy[9]. Universal screening usually is performed at 24-28 weeks of gestational age[10]. There are several methods of screening test but the more agreed now is OGTT with 75 gr glucose instead of OGTT with 100 gr glucose[11].

MATERIAL AND METHOD

This was a cross sectional study with cluster sampling from april 2012 to october 2013 all the pregnant women that referred to shariati hospital, private offices and general clinics in bandarabbas city in the south of Iran were evaluated on the first visit. During this visit after obtaining history about risk factors of gestational diabetes and complete physical examination 1900 pregnant women with the following properties selected as group studied but 72 persons for not coming, 10 persons for failure to do GTT and 18 persons for abortion were excluded from this study. Specifications of this group were: age <25 years, normal body weight before pregnancy, no history of diabetes in herself or her first degree family, no history of glucose intolerance, absence history of poor obstetrical outcome, BMI ≤ 26, no history of abortion, no history of high birth weight and the rest of the pregnant women without these properties were excluded from this study. After obtaining informed consent, questionnaire about age, weight, BMI and lodgings (urban or rural) was completed by questionnaire. Second visit was performed from 24-28 weeks and GCT (blood sugar control after one time use 50 gr glucose) was requested for group studied. In this group studied regardless of fasting, GCT was performed. If blood sugar was ≥ 130 mg/dl GTT was requested (control of FBS before and blood sugar an hour and two hours after use 75 gr glucose). Results of these tests logged in questionnaire, if at least one of these among FBS was ≥ 92 mg/dl or blood sugar after an hour was ≥ 180 and or blood sugar after 2 hours was ≥ 153 persons accepted as GDM.

RESULTS

In this study 1900 persons that referred to shariati hospital, private offices and general clinics selected on the first visit but 72 persons for not coming, 10 persons for failure to do GTT and 18 persons for abortion were excluded from this study and ultimately 1800 persons were evaluated during 18 months. The mean age of study population was 21.54 ± 2.57 that was variable the minimum 14 years to maximum 25 years. 264 person had 24 years that was the most percent of age group (14.7%) and 4 person had 14 years that was the least percent of age group (0.2%). 262 persons (14.5%) were under 18 years, 586 persons (32.6%) were 18-21 years and 952 persons (52.9%) were 21-25 years. The mean age of study population 158.29 ± 5.87 cm that was variable from 138 to 181 cm. The mean weight of group studied was 53.91 ± 8.13 kg that was variable from 31 to 75 kg. The mean BMI of group studied was 21.5 ± 2.67 kg/m² that was variable between the minimum 13.8 to maximum 25.83 kg/m². In study population 314 persons (17.4%), had BMI under 18.5 kg/m², 1447 persons (79.8%) had normal BMI (18.5 to 25 kg/m²) and 39 persons (2.8%) had BMI over 25 kg/m². In group studied 1739 persons (96.6%) had normal GTT and 61 persons (3.4%) had abnormal GTT as 7 persons were under 18 years of age, 14 persons were 18-21 years of age and 40 persons were 21-25 years of age. Although prevalence of gestational diabetes in the age group of 21-25 years was 4.2% that was more than other age groups nevertheless chi square test showed that this difference is not significant ($p > 0.05$). Among the people with abnormal GTT, 13 persons had BMI under 18 kg/m², 48 persons had BMI between 18.5 to 25 kg/m² and none of them had BMI over 25 kg/m². There is not a significant relationship between gestational diabetes and BMI ($p > 0.05$). 1092 persons (60.7%) of group studied were urban and 708 persons (39.3%) were rural. 1065 persons (97.5%) that were urban and 674 persons (95.1%) that were from rural areas had normal GTT. In this study the number of rural residents had higher gestational diabetes suffering than urban residents and there is a significant relationship between gestational diabetes and lodging ($p < 0.05$). Ultimately the prevalence of gestational diabetes in low risk pregnant women obtained 3.4%.

DISCUSSION

This study performed on pregnant women without risk factor from 24-28 weeks and the main objective of this study was the determination of the prevalence of gestational diabetes in low risk pregnant women and determination of necessity and value of screening test in this population. Similar this study was performed on 178 pregnant women in Talghani hospital in tehran by Dr. Ashrafi and et al and they reported the prevalence of gestational diabetes 2.8% [12], but the prevalence of gestational diabetes in our study was 3.4% that in contrast to the above study is higher prevalence. Also in another study that was performed by Dr. Larijani and et al in tehran on 2416 low risk pregnant women the prevalence of gestational diabetes reported 4.5% [13]. In another study in Michigan reported the prevalence of gestational diabetes in population without risk factor 11% and they concluded that selective screening

should be done 11% of patients not be detected[14].on the other in american study there is not agreement how to do the screening test in gestational diabetes but because of high prevalence despite the high cost universal screening is recommended[15].Although asian race is high risk for gestational diabetes there is not sufficient information about selective screening or universal screening[16].Nowadays there is substantial evidence that screening on base of risk factors is not favorable several studies showed that many of gestational diabetics women had not risk factors and selective screening causes they will remain unknown.Ultimately according to the high prevalence of gestational diabetes in low risk women,for prevention of compli ation we recommend universal screening of gestational diabetes for all pregnant women and according to significant relationship between gestational diabetes and location of life we recommend more studies to find risk factors in rural areas and universal screening in these areas.

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