GEBELİK VE DİYABET SEMPOZYUMU

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Maternal - Fetal Test ve Perinatolojî Derneği Türkiye
Inflammation and Glycemic Tolerance Status in Pregnancy: The Role of Maternal Adiposity

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Key Words
Inflammation · Gestational diabetes mellitus · Obesity · C-reactive protein · Fibrinogen

Abstract

Background/Aims: Although the association between inflammation and insulin resistance is well known, the data related to the role of inflammation in gestational diabetes mellitus (GDM) are conflicting. The aim of this study was to investigate the association of several inflammatory mediators with the glycemic status in pregnancy. Methods: Leukocyte count, ferritin, C-reactive protein (CRP), fibrinogen and interleukin-6 levels were measured in 70 patients with normal glucose tolerance, in 28 patients with impaired glucose tolerance and in 35 patients with GDM as determined based on 50-gram oral glucose tolerance test (OGTT) and 100-gram OGTT results. Results: A significant difference among the groups was seen only with regard to CRP and fibrinogen levels; however, no significant differences were observed after adjustment for body mass index (BMI). CRP was found to be strongly associated with current BMI in all three groups. Conclusion: Maternal serum levels of inflammatory mediators are not related to GDM at the time of the glucose tolerance test in the late second or early third trimester. The significant difference in the levels of CRP in different strata of glycemic tolerance was not observed after adjustment for BMI. Adiposity may have a central role in GDM, causing an inflammatory response.

Introduction

Many studies suggest that inflammation may be an underlying pathophysiologic mechanism contributing to the development of many adverse clinical outcomes, including type 2 diabetes mellitus (T2DM), metabolic syndrome, obesity and atherosclerotic vascular disease [1]. Proinflammatory cytokines released from adipose tissue [interleukin (IL)-6, tumor necrosis factor (TNF)-α and adiponectin], as well as other acute-phase inflammatory mediators, such as leukocyte count, plasma activator inhibitor-1, fibrinogen and C-reactive protein (CRP), can contribute to the future development of T2DM and cardiovascular disease [2].

Gestational diabetes mellitus (GDM) is a common metabolic complication of pregnancy that shares many features of T2DM, including glucose intolerance and insulin resistance [3]. A potential pathophysiologic relationship between GDM and T2DM is further supported by the significantly elevated lifetime risk of T2DM in women who developed impaired glucose tolerance during pregnancy [4].
GESTATIONAL DIABETES MELLITUS SEEMS TO BE ASSOCIATED WITH INFLAMMATION

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SUMMARY – The aim of this study was to investigate whether gestational diabetes mellitus (GDM) is associated with inflammation by comparing serum levels of human chitinase-3-like protein 1 (YKL-40), neutrophil/lymphocyte ratio (NLR) and platelet/lymphocyte ratio (PLR). This case control study included 29 pregnant women with GDM and 29 pregnant women with normal glucose tolerance matched for age (±2 years) and pre-pregnancy body mass index (±2 kg/m²). The YKL-40/CHI3L1 levels were measured, and NLR and PLR investigated. There were no statistically significant differences in maternal age, gestational age, gravidity and parity. Higher YKL-40 levels were recorded in pregnant women with GDM compared to control subjects (203 (65-300) ng/mL vs. 159.2 (14-290) ng/mL, p=0.007). NLR and PLR were significantly higher in GDM compared with control group. In conclusion, GDM is associated with high levels of YKL-40, NLR and PLR, which indicate inflammatory status.

Key words: CHI3L1 protein, human, Diabetes, gestational, Leukocyte count, Neutrophils – cytology, Lymphocytes – cytology; Blood platelets – cytology
One-hour versus two-hour postprandial blood glucose measurement in women with gestational diabetes mellitus: which is more predictive?

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Abstract The purpose of this study is to investigate postprandial 1-h (PP1) and 2-h (PP2) blood glucose measurements’ correlation with adverse perinatal outcomes. This prospective cohort study consisted of 259 women with gestational diabetes mellitus. During each antenatal visit, HbA1c and fasting plasma glucose (FPG) as well as plasma glucose at PP1 and PP2 were analyzed. There were 144 patients on insulin therapy and 115 patients on diet therapy. A total of 531 blood glucose measurements were obtained at different gestational ages between 24 and 41 gestational weeks. PP2 plasma glucose measurements (but not PP1) were positively correlated with fetal macrosomia. But on adjusted analysis, neither PP1 nor PP2 measurements predicted perinatal complications. In addition to PP1 and PP2, neither FPG nor HbA1c were able to predict perinatal complications or fetal macrosomia when controlled for confounding factors except for a positive correlation between fetal macrosomia and HbA1c in patients on diet therapy. Postprandial 1-h and postprandial 2-h plasma glucose measurements were not superior to each other in predicting fetal macrosomia or perinatal complications. Based on our findings, it can be concluded that both methods may be suitable for follow-up as there are no clear advantages of one measurement over the other.

Keywords Gestational diabetes mellitus · Postprandial 1-hour · Postprandial 2-hour · Adverse perinatal outcomes · Glucose measurement

Introduction

There have been major advances in the diagnosis and management of gestational diabetes mellitus (GDM). Maternal hyperglycemia has been known to be strongly associated with fetal macrosomia and several neonatal metabolic complications [1-6]. These complications result from the fetal hyperglycemia and hyperinsulinemia following maternal carbohydrate intolerance [7]. This theory was further consolidated by the Hyperglycemia and Adverse Pregnancy Outcomes (HAPO) study, which has demonstrated a linear association between maternal hyperglycemia and neonatal morbidity including macrosomia [1]. These findings led to a need to decrease the thresholds of GDM at the cost of an increase in the incidence of GDM. However, global application of these diagnostic criteria is still controversial as the cost-effectiveness is yet to be determined [7]. A consensus is present on the safety of normoglycemic blood glucose levels but the threshold predicting hyperglycemic complications is not clear. The importance of obtaining optimal glycemic...
The Value of Total antioxidant Status and Serum Tumor Necrosis Factor-α Levels at 24–28 Weeks of Gestation in the Prediction of Optimal Treatment Protocol in Gestational Diabetes Mellitus

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Key words
• gestational diabetes mellitus
• insulin requirement
• oxidative stress
• tumor necrosis factor-α

Abstract

Aim: The aim of this study was to investigate the serum oxidative stress markers, antioxidant enzyme and tumor necrosis factor-α (TNF-α) levels at 24–28 weeks of gestation and to evaluate the predictive value of them on the subsequent treatment protocol in gestational diabetes mellitus (GDM).

Methods: A total of 58 GDM patients (30 treated with only conventional healthy dietary recommendation (CHDR), 28 treated with insulin) and 30 healthy pregnant women at 24–28 weeks of gestation, were enrolled in this prospective case-control study. The oxidative status, antioxidant enzyme and TNF-α levels were evaluated to determine if there is an association with the need of insulin therapy for glycemic control by using multivariable logistic regression analysis.

Results: TNF-α (OR=11.976, 95%CI: 2.441–56.754, P=0.002) and total antioxidant status (TAS) (OR=12.769, 95%CI: 2.464–66.182, P=0.002) were found to be predictive for GDM at 24–28 weeks of gestation. Besides, further evaluation considering the treatment modality showed that increased TNF-α (OR=18.615, 95%CI: 2.338–148.240, P=0.006) and lower TAS levels (OR=99.471, 95%CI: 2.865–3453.061, P=0.011) were independent predictors of the need for insulin treatment in GDM patients.

Conclusions: Increased TNF-α levels and low TAS are significantly associated with the increased risk of insulin requirement for achieving good glycemic control in GDM.
Second-trimester urinary neutrophil gelatinase-associated lipocalin levels in gestational diabetes: preliminary results

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ABSTRACT

Objective: The objective of this study is to investigate the urinary neutrophil gelatinase-associated lipocalin (uNGAL) levels in the second trimester of pregnant patients at the time of gestational diabetes mellitus (GDM) screening.

Materials and methods: Urinary samples from 88 pregnant women who underwent gestational diabetes screening test were collected in late second trimester (24–28 weeks) prospectively. After an overnight fasting, 75 g GTT was performed. The blood samples were drawn for measurement of glucose, insulin, and HbA1c. The urinary and blood parameters were compared for pregnant women with or without gestational diabetes.

Results: uNGAL levels were significantly elevated in pregnant women with gesting compared with the control groups (p < .014). There was a positive correlation between uNGAL and HbA1c levels (p = .001).

Conclusions: In the second trimester, at the time of GDM screening, high levels of uNGAL indicate tubular injury in GDM cases which seems to be a result of hyperglycemia. uNGAL may correlate with an inflammatory renal involvement in GDM.
The investigation of the role of proteoglycans and ADAMTS levels in fetal membranes in physiopathological process of gestational diabetes

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ABSTRACT

About 2–5% of all pregnant women develop gestational diabetes mellitus (GDM) during pregnancy and its prevalence has increased markedly within the last decade. GDM is a metabolic syndrome produced by various degrees of carbohydrate intolerance during pregnancy. Various risk factors such as obesity, genetics, environmental factors, and hypertension have been described previously. Maternal and fetal complications occur in around 7% of pregnant women with GDM. In these patients, a relation between proteoglycans and ADAMTS proteases located in extracellular matrix in fetal membranes (placenta, cord, amnion) and complicated pregnancies has already been determined by various animal experiments. Changes in expression, structure and function of ADAMTS proteases and proteoglycans in fetal membranes lead to alteration in the structure of extracellular matrix. If we can establish a balance between these proteoglycans and ADAMTS proteases or determine the changes in their structure and functions, it will be possible to predict the risk in high risk pregnancies at early weeks and to initiate treatment early or to follow the target population regularly. In addition, prevention or reduction of maternal and fetal complications may be possible. For this purpose, ADAMTS and proteoglycans the synthesis of which is too much or less, may be targeted and if we would be able to determine and prevent the changes in their levels in the early period of pregnancy, the development of GDM and its complications may be prevented or decreased. Thus, we may identify a marker for early diagnosis and treatment and reduce prematurity, which is the most common cause of fetal death. Fetal and maternal complications, and especially treatment and care costs of prematurity, may also be decreased.

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Impact of Gestational Diabetes Mellitus and Maternal Obesity on Cord Blood Dynamic Thiol/Disulfide Homeostasis

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**ABSTRACT**

\textbf{Aim:} Our aim in this study was to investigate the effect of maternal obesity and gestational diabetes mellitus (GDM) on cord blood dynamic thiol/disulfide homeostasis. \textbf{Methods:} A prospective case–control study was carried out in 125 pregnant women (27 GDM, 30 obese, 68 controls). Cord blood samples were collected from all participants and native thiol-disulfide exchanges were examined with automated method enabling the measurement of both sides of thiol-disulfide balance. \textbf{Results:} Disulfide amounts, disulfide/native thiol and disulfide/total thiol ratios were increased ($p < 0.001$), while native thiol/total thiol was decreased in the cord blood of babies born to an obese or diabetic mother ($p < 0.001$). Moreover, increased disulfide amounts, disulfide/native thiol, disulfide/total thiol ratios and decreased native/total thiol were found to be significantly associated with adverse outcomes in GDM. \textbf{Conclusion:} The current study suggests that the offsprings born to obese or diabetic mothers are exposed to increased oxidative stress.
Assessment of fetal myocardial performance index in women with pregestational and gestational diabetes mellitus

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Abstract

**Aim:** Fetal cardiac left ventricular function in pregnant women with pregestational or gestational diabetes mellitus was investigated by exploring fetal myocardial performance index (MPI) and E wave/A wave peak velocity (E/A) ratio.

**Methods:** Seventy pregnant women with either pregestational or gestational diabetes mellitus and with no other systemic or pregnancy related disorders were compared with 70 gestational age matched healthy controls by means of fetal left ventricular MPI and E/A ratio. Opening and closing clicks of the mitral and aortic valves were used to define the three time periods: ejection time (ET), isovolumetric contraction time (ICT) and isovolumetric relaxation time (IRT), which were employed in the calculation of MPI (MPI = [ICT + IRT]/ET). Statistical analyses were conducted using receiver operating characteristic analysis and independent two-sample t, Mann–Whitney U and chi-square tests.

**Results:** Fetal left ventricular MPI values were significantly higher in the diabetic group compared with controls (0.56 ± 0.09 vs 0.36 ± 0.04, P < 0.001), whereas E/A ratio was lower (0.66 ± 0.11 vs 0.69 ± 0.09, P = 0.049). The adverse perinatal outcome rate was also higher in the diabetic group. Receiver operating characteristic analysis revealed > 0.39 as the optimal cut-off level for MPI in perinatal adverse outcome prediction (sensitivity: 90.9%, specificity: 47.7%, area under the curve: 0.690, 95% confidence interval: 0.598–0.782, P < 0.001).

**Conclusions:** We conclude that fetuses of diabetic mothers have significant left ventricular systolic and diastolic dysfunction. MPI may be used in the prediction of adverse perinatal outcome in diabetic pregnancies.

**Key words:** diabetes, myocardial performance index, outcome.
Thiol/disulfide homeostasis in predicting adverse perinatal outcomes at 24–28 weeks of pregnancy in gestational diabetes

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Abstract

Objective: The main aim of this study was to investigate thiol/disulfide homeostasis at 24–28 weeks of pregnancy and to evaluate whether it is predictive for adverse perinatal outcomes or not in gestational diabetes mellitus (GDM).

Methods: A total of 110 pregnant women at 24–28 weeks of pregnancy (74 GDM patients and 36 age- and BMI-matched healthy pregnant women) were enrolled in this prospective case-control study. Thiol/disulfide homeostasis was evaluated with a novel spectrophotometric method to determine if there is an association with adverse perinatal outcomes in GDM, by using logistic regression analysis.

Results: GDM patients, with decreased native thiol levels at 24–28 weeks (OR: 4.890, 95% CI: 1.355–17.704, p = 0.015) and with higher pre-pregnancy BMI (OR: 1.280, 95% CI: 1.072–1.528, p = 0.006), were found to be at increased risk of adverse perinatal outcomes in GDM. There were no statistically significant differences in thiol/disulfide homeostasis between diet- and insulin-treated GDM subgroups. Additionally, 1-h and 2-h glucose levels on 100g OGGT were found to be predictive for the insulin need in achieving good glycemic control in GDM (OR: 1.022, 95% CI: 1.005–1.038, p = 0.010 and OR: 1.019, 95% CI: 1.004–1.035, p = 0.015).

Conclusions: GDM patients, with decreased native thiol levels at 24–28 weeks of pregnancy and with higher pre-pregnancy BMI, have an increased risk of possible adverse perinatal outcomes. Also, increased 1-h and 2-h glucose levels on 100g OGGT can predict the need for insulin treatment for GDM.
Clinical significance of fasting plasma glucose in patients with normal 50-g glucose challenge test in pregnancy: Is 100 bigger than 92?

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ABSTRACT
The present study aimed to analyse the perinatal outcomes in patients with normal 50-g Glucose Challenge Test but who were considered retrospectively to have gestational diabetes mellitus based on elevated fasting plasma glucose (FPG) levels according to recent criteria. The study was conducted between January 2010 and December 2014 to identify patients with FPG values >92 mg/dl and GCT values <130 mg/dl. The patients were divided into two groups: those with FPG values between 92 and 99 mg/dl (Group 1) and those with FPG values >99 mg/dl (Group 2). The rate of obstetric complications was similar in the three groups, except for a higher rate of preeclampsia in Group 2 than in the control group (8.3% versus 3.1%; \( p = 0.031 \)). The rate of large for gestational age neonates in Group 2 was 15%, which was higher than the rate in Group 1 (5.5%) and control group (7.4%) (\( p = 0.046 \) and \( p = 0.047 \), respectively). The rate of neonatal intensive care unit admissions in Group 2 was 11.7%, which was higher than the rate in Group 1 (3.1%) and in the control group (2.4%). Our findings indicate that there is a clinically recognisable difference in perinatal outcomes when a threshold of 100 mg/dl is used for FPG instead of 92 mg/dl.

KEYWORDS
Fasting plasma glucose; gestational diabetes; glucose challenge test
Maternal Diabetes as an Independent Risk Factor for Retinopathy of Prematurity in Infants With Birth Weight of 1500 g or More

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PURPOSE: To evaluate the relationship between maternal diabetes and the development of retinopathy of prematurity (ROP) in infants with a birth weight of 1500 g or more.

DESIGN: Retrospective case-control study.

METHODS: Data of 78 premature infants from diabetic mothers were compared with data of 258 controls. We examined the relationship between maternal diabetes and the development of ROP and type 1 ROP, adjusting for multiple risk factors. Multivariable logistic regression analysis was used to identify the risk factors of outcome variables. Prior to multivariable logistic regression analysis, the association of each independent variable with the outcome variables, a univariate estimate was performed. The crude and adjusted odds ratio (OR) values and their 95% confidence intervals (CI) were given. Main outcome measures were the development of ROP and the development of type 1 ROP.

RESULTS: The study was conducted on 336 preterm infants; 78 were from diabetic mothers and 258 were from nondiabetic mothers. The rate of ROP (78.2% in case group and 14.7% in control group) and the rate of type 1 ROP (20.5% in case group and 4.7% for controls) were found significantly higher in the case group ($P = .001$ for both). Maternal diabetes was shown to be an independent risk factor for both ROP and type 1 ROP (OR with 95% CI: 25.040 [12.728–49.264]; 6.311 [2.647–15.048], respectively, and $P < .001$ for both).

CONCLUSION: Our data suggest that the presence of maternal diabetes is significantly associated with the development of ROP and type 1 ROP in premature infants with a birth weight of 1500 g or more. (Am J Ophthalmol 2016;168:201–206. © 2016 Elsevier Inc. All rights reserved.)
Prediction of gestational diabetes mellitus by first trimester serum secreted frizzle-related protein-5 levels

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Abstract

Objective: The main aim of this study was to investigate the first trimester maternal serum secreted frizzle-related protein-5 (Sfrp-5) levels and to evaluate the predictive value on the subsequently developed gestational diabetes mellitus (GDM).

Methods: A total of 40 pregnant women who subsequently developed GDM and 44 age- and pre-pregnancy BMI-matched healthy pregnant women were enrolled in this prospective case-control study. First trimester serum Sfrp-5 levels were evaluated to determine if there is an association with the onset of GDM, by using logistic regression analysis.

Results: Decreased first trimester serum Sfrp-5 levels (OR= 14.332, 95%CI: 4.166–49.301, \( p<0.001 \)) were found to be significantly associated with the increased risk of GDM. There were no statistically significant differences in serum Sfrp-5 levels between the diet- and insulin-treated GDM groups and also serum Sfrp-5 levels were not found to be predictive for adverse perinatal outcomes (\( p>0.05 \)).

Conclusions: Decreased first trimester serum Sfrp-5 levels are significantly associated with the increased risk of GDM.
Prediction of gestational diabetes mellitus in the first trimester: comparison of C-reactive protein, fasting plasma glucose, insulin and insulin sensitivity indices

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Abstract

Objective: To develop a predictive index based on high sensitivity C-reactive protein (hs-CRP), fasting plasma glucose (FPG) and fasting plasma insulin (FPI) measurements for early diagnosis of gestational diabetes mellitus (GDM).

Methods: Healthy pregnant women who were screened for GDM during their first antenatal visit were included in this retrospective cohort study. FPG, FPI and serum hs-CRP concentrations were measured between weeks 11 and 14. A two-step glucose challenge test was carried out between gestational weeks 24 and 28. Fasting glucose/insulin ratio (FIRG), Homeostatic Model Assessment Insulin Resistance (HOMA-IR), HOMA-β indices and Quantitative Insulin Sensitivity Check Index (QUICKI) were used to estimate insulin sensitivity and β-cell function.

Results: Of the 450 women who were eligible for the study, 49 (11.2%) were diagnosed with GDM at weeks 24–28. The median FPG and hs-CRP levels were higher in the GDM diagnosed women compared to the others. Comparison of accuracy measures resulted in the highest specificity (87.2%; 95% CI 83.5–90.1) and diagnostic odds ratio (3.9; 95% CI 2.1–7.6) for hs-CRP.

Conclusion: FPG and hs-CRP in the first trimester are correlated with later development of GDM in the pregnancy. In our study, FPG provided a better sensitivity while hs-CRP exhibited a better specificity for prediction of GDM.

Keywords
Fasting plasma glucose, gestational diabetes mellitus, high sensitivity C-reactive protein, homeostatic model assessment, insulin
Alterations of Ionized and Total Magnesium Levels in Pregnant Women with Gestational Diabetes Mellitus

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Key Words
Magnesium; ionized; total; pregnancy; gestational diabetes mellitus

Abstract
Background/Aims: The aim of this prospective study was to determine ionized and total magnesium (Mg) levels in pregnant subjects with and without gestational diabetes mellitus (GDM). Methods: Eighty-five women, 26–28 weeks pregnant, were recruited for routine oral glucose tolerance tests (OGTT). 45 had normal OGTT results and 40 were diagnosed with GDM. Electrolyte levels, including ionized and total Mg, were analyzed. Results: Gestational age and BMI were similar between the two groups (p = 0.800, p = 0.025). Multivitamin use was higher in the control group (p = 0.036). Fasting blood glucose was higher in the GDM group (p < 0.001). The median total Mg levels were 1.9 mg/dl (range 1.6–2.2) in the control group and 1.8 mg/dl (range 1.2–2.1) in the GDM group (p < 0.001). The median ionized Mg levels were 0.5 mmol/l (range 0.4–0.6) in the control group and 0.4 mmol/l (range 0.4–0.5) in the GDM group (p < 0.001). Conclusions: Our study revealed a relationship between low total and ionized Mg levels and GDM, as in type 2 diabetes mellitus (DM). The literature regarding type 2 DM and our findings suggest that Mg is the key ion in the pathophysiology of GDM. Low-dose Mg supplementation was not related to GDM; however, pharmacological doses in the various stages of pregnancy could be beneficial and should be investigated.

Introduction
Gestational diabetes mellitus (GDM) is defined as any degree of glucose intolerance with onset or first recognition during pregnancy [1]; approximately 7% of all pregnancies are complicated by GDM. Physiological insulin resistance (IR) is present during pregnancy, which is a hyperinsulinemic and euglycemic state. IR begins near mid-pregnancy and progresses through the third trimester to levels that approximate the IR seen in individuals with type 2 diabetes mellitus (DM). It appears to result from a combination of increased maternal adiposity and the hormonal products of the placenta. Fortunately, IR is normally compensated for by modified pancreatic β-cell function; thus, the changes in circulating glucose levels over the course of pregnancy are quite small [2].
Prediction of gestational diabetes mellitus in the first trimester, comparison of fasting plasma glucose, two-step and one-step methods: a prospective randomized controlled trial

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Abstract Our aim was to evaluate and compare the diagnostic performance of three methods commonly used for GDM screening: fasting plasma glucose (FPG), two-step 50 g glucose challenge test (GCT), and 75 g glucose tolerance test (GTT) in a randomized study design to predict GDM in the first trimester and determine the best approach in predicting GDM. In a non-blind, parallel-group prospective randomized controlled study; 736 singleton pregnant women underwent FPG testing in the first trimester and randomly assigned to two groups; two-step 50 g GCT and 75 g GTT. GDM diagnosis was made according to Carpenter-Coovston or ADA (American Diabetes Association) criteria in two-step 50 g GCT and 75 g GTT groups, respectively. Subsequent testing was performed by two-step 50 g GCT at 24-28 weeks for screen negatives. After excluding the women who were lost to follow-up or withdrawn as a result of pregnancy loss, 486 pregnant women were recruited in the study. The FPG, two-step GCT, and one-step GTT methods identified GDM in 224/486 (5.1 %), 152/486 (6.0 %), and 272/486 (11.3 %) women, respectively. Area under ROC curves were 0.623, 0.708, and 0.792, respectively. Sensitivities were 47.17, 68.18, and 87.1 %, respectively. Specificities were 77.37, 100, and 100 %, respectively. Positive predictive values were 20.33, 100 %, and 100 %, respectively. Negative predictive values were 92.29, 97, and 98.1 %, respectively. Until superior screening alternatives become available, the 75 g GTT may be preferred for GDM screening in the first trimester.

Keywords Gestational diabetes mellitus · First trimester · Screening · Fasting plasma glucose · Glucose tolerance test · Randomized controlled trial

Introduction Gestational diabetes mellitus (GDM) is defined as any degree of glucose intolerance with onset or first recognition during pregnancy, whether or not the condition persisted after pregnancy and not excluding the possibility that unrecognized glucose intolerance may have antedated or begun concomitantly with the pregnancy [1-3]. GDM affects 1-4 % of all pregnant women, causing increased short- and long-term maternal and perinatal complications [4, 5]. There is a lack of international uniformity in the approach of screening and diagnosis for GDM [1, 4, 6-13]. While a glucose challenge test is commonly employed, glucose dosages and diagnostic thresholds vary greatly [6]. The International Association of Diabetes in Pregnancy Study Groups (IADPSG) and American Diabetes Association (ADA) recommended a simplified "one-step" approach to the screening and diagnosis of GDM with 75 g glucose tolerance test (GTT) [1, 6]. Screening and diagnosis of GDM is commonly delayed until 24-28 weeks of
Obstetrics

Serum adiponectin in gestational diabetes and its relation to pregnancy outcome

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We investigated adiponectin levels in women with gestational diabetes mellitus (GDM) and normal glucose tolerance (NGT) at 24–28 gestational weeks. Fasting serum adiponectin, glucose and glycated haemoglobin (HbA1c) were determined in 88 pregnant women, 44 with GDM and 44 with NGT. Pre-pregnancy and current body mass indices (BMI), weight gain and pregnancy outcomes were investigated. Serum adiponectin was significantly reduced in GDM compared with the NGT group (p = 0.000). Adiponectin was negatively correlated with age (r = -0.419, p = 0.000); glucose (r = -0.263, p = 0.013); HbA1c (r = -0.274, p = 0.01); BMI (pre-pregnancy and current) (r = -0.317, p = 0.003 and r = -0.303, p = 0.004) and positively correlated with gestational age at delivery (r = 0.278, p = 0.009).

The GDM group delivered significantly earlier than the NGT group (p = 0.001). Adverse pregnancy outcomes and abdominal delivery were higher in the GDM group (p = 0.0000, p = 0.033, respectively), and adiponectin was significantly reduced in patients with adverse outcomes (p = 0.003) and abdominal delivery (p = 0.032). Adiponectin is reduced in patients with GDM. Association of adiponectin with adverse pregnancy outcomes remains to be elucidated.

Keywords: Adiponectin, adverse pregnancy outcomes, gestational diabetes mellitus

gestational diabetes compared with healthy pregnant women (Worda et al. 2004; Altinova et al. 2007; Soheilykhah et al. 2009).
Maternal serum adiponectin has also been reported to be associated with adverse perinatal outcomes, such as pre-eclampsia or IUGR (Lowe et al. 2010). Maternal serum adiponectin in the 1st trimester of pregnancy was also identified as a useful biomarker for early prediction of macrosomia (Nanda et al. 2011).

In the present study, we investigated plasma adiponectin levels in women with GDM compared with healthy pregnant women. We also evaluated the relation of serum adiponectin to adverse perinatal outcomes and mode of delivery.

Materials and methods

A total of 88 pregnant women, 44 with GDM and 44 with normal glucose tolerance (NGT), attending the antepartum outpatient clinic in Zekai Tahir Burak Women's Health Education and Research Hospital, were enrolled in this prospective cohort study between June 2011 and January 2012. The study was approved by the Institutional Review Board and written informed consent of all participants was obtained.

A screening 50 g oral glucose challenge test (GCT) was performed for all patients between 24–28 weeks of pregnancy. Women with blood glucose levels > 140 mg/dl at the screening test underwent a 3 h oral glucose tolerance test (OGTT) with
The effect of diet on pregnancy outcomes among pregnant with abnormal glucose challenge test

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Abstract. - OBJECTIVES: Gestational diabetes mellitus (GDM) is defined as glucose intolerance, first time detected in pregnancy. Diagnostic criteria for GDM have changed over the decades. The aim of the study was to examine the effect of diet on birth weight, number of large for gestational age (LGA) (birth weight > 90th percentile) babies, total maternal weight gain, gestational age and route of delivery among patients with positive 50 g glucose challenge test (GCT) and negative 100 g oral glucose tolerance test (OGTT).

PATIENTS AND METHODS: A prospective randomized controlled study was conducted among patients with positive 50 g GCT and negative 100 g OGTT. A plasma glucose value of 140 mg/dL was used as the threshold to define an abnormal GCT result. In group 1 50 patients were given a caloric diet and compared with group 2 with 50 patients without a given diet. Patients were followed up until delivery and evaluated for birth weight, number of LGA babies, total maternal weight gain, gestational age and route of delivery.

RESULTS: There were no significant differences between the groups in maternal age, parity, body mass index and gestational age at delivery. There were significant differences in birth weight, number of LGA babies, total maternal weight gain during pregnancy. The mean gestational age at delivery was 38.7±1.2 weeks in group 1 and 38.9±1.1 weeks in group 2 (p = 0.615). The mean birth weight in group 1 was 3328±399 g and 3623±465 g in group 2 (p = 0.007), cesarean rate was 32% in group 1 and 40% in group 2 (p = 0.046).

CONCLUSIONS: In the management of patients with positive 50 g GCT and negative 100 g OGTT, patients who were prescribed medical nutrition therapy by a diettian experienced in GDM management had better perinatal outcomes.

Introduction

GDM is defined as glucose intolerance, first time detected during pregnancy. The International Association of Diabetes and Pregnancy Study Group (IADPSG), recommended a change to this terminology. In this system, diabetes diagnosed during pregnancy is classified as overt or gestational. Diagnostic criteria for GDM have changed over the time. According to The American Diabetes Association (ADA) a diagnosis of gestational diabetes can be made in women who meet either of the following criteria: Fasting plasma glucose ≥ 92 mg/dL (5.1 mmol/L), but < 126 mg/dL (7.0 mmol/L) at any gestational age [fasting plasma glucose ≥ 126 mg/dL (7.0 mmol/L) is consistent with overt diabetes]; or 2 to 28 weeks of gestation: 75 g two hour oral glucose tolerance test (GGT) with at least one abnormal result: fasting plasma glucose ≥ 92 mg/dL (5.1 mmol/L), but < 126 mg/dL (7.0 mmol/L) or one hour ≥ 180 mg/dL (10.0 mmol/L) or two hour ≥ 153 mg/dL (8.5 mmol/L).

Hypertensive disorders, preterm delivery, shoulder dystocia, stillbirths, clinical neonatal hypoglycemia, hyperbilirubinemia, and cesarean deliveries are perinatal complications associated with GDM. Obesity and impaired glucose tolerance in the offspring and diabetes and cardiovascular disease in the mothers are some of the postpartum complications. Recognition and appropriate management strategies can decrease complications associated with GDM. The aim of the study was to examine the effect of diet on birth weight, route of delivery and gestational age at delivery among patients with positive 50 g GCT and negative 100 g OGTT.
Cost-Effectivity Analysis of One-Step Versus Two-Step Screening for Gestational Diabetes

Gestasyonel Diyabet için Tek ve İki Aşamalı Taramanın Maliyet Etkinlik Analizi

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Abstract

Objective: Early diagnosis of gestational diabetes mellitus (GDM) is important for both maternal and fetal health. The literature has varying recommendations about one-step and two-step tests for GDM screening and diagnosis. The present study aimed to investigate the difference in the cost and duration of hospital stay of a one-step procedure compared to a two-step procedure, which is routinely performed in our hospital.

Materials and Methods: The two-step procedure was performed in 2,724 pregnant women, and the one-step procedure was performed in 185 pregnant women. The one-step and two-step screening procedures for gestational diabetes were compared with respect to the duration of hospital stay and cost.

Results: The test cost per woman was 0.75 TL less in the one-step procedure; however, the duration of the one-step test was 18.6 min longer, and the number of blood sampling procedures was 1.08 times higher.

Conclusion: The one-step method may be preferred over the two-step (or glucose challenge) test due to its diagnostic value and lower cost.

Key Words: Cost-effectiveness, Gestational diabetes, Screening

Özet


Gereç ve Yöntem: İki aşamalı test 2724, tek aşamalı test ise 185 beşekti. Bir ve iki aşamalı test prosedürleri süre ve maliyet açısından karşılaştırılmıştır.

Bulgular: Tek aşamalı testin maliyeti 0.75 TL daha düşük olması rağmen testin süresi 18.6 dakika ve kan değerini yaklaşık 1.08 kat daha yüksek bulunmuştur.

Sonuç: Tek aşamalı test yöntemi tansal değeri ve düşük maliyeti nedeni ile glukoz tarama testleri veya iki aşamalı teste tercih edilebilir.

Anahtar Kelimeler: Maliyet etkinliği, Gestasyonel diyabet, Tarama
Retrospective evaluation of perinatal outcome in women with mild gestational hyperglycemia

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Abstract

Aim: To assess maternal and perinatal complications associated with mild gestational hyperglycemia (MGH).

Material and Methods: This retrospective study was conducted in the perinatology division of Zekai Tahir Burak Women’s Hospital between January and June 2009. Four hundred and eighty one patients with MGH and 212 patients with pre-gestational diabetes or gestational diabetes mellitus (GDM) were recruited in the study. The control group consisted of 479 patients with normal glucose challenge test. Patients with MGH and the control group were compared in terms of maternal and neonatal complications.

Results: The rates of large-for-gestational-age (LGA) or macrosomic infants, pregnancy induced hypertension, primary cesarean delivery, preterm delivery and neonatal hypoglycemia were significantly higher in patients with MGH, GDM or preexisting diabetes. The rates of spontaneous preterm labor, shoulder dystocia, hyperbilirubinemia, low 1-min Apgar score, fetal malformations and neonatal morbidity did not differ between the groups.

Conclusion: MGH is associated with an increased risk of primary cesarean delivery, preterm delivery, pregnancy induced hypertension, and macrosomic and LGA infants.

Key words: diabetes mellitus, macrosomia, obstetric complication.
Umbilical cord oxidative stress in infants of diabetic mothers and its relation to maternal hyperglycemia

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Abstract

Aims: There is growing body of evidence that oxidative stress plays an important role in the pathogenesis of diabetes mellitus (DM) and in development of maternal and fetal complications of diabetic pregnancies. The aim of the present study was to investigate the total antioxidant capacity (TAC), total oxidant status (TOS), and oxidative stress index (OSI) in infants of diabetic mothers (IDM) and to reveal the influence of maternal hyperglycemia on these parameters.

Methods: A prospective controlled study was conducted between March 2010 and November 2010. Umbilical cord blood was taken from IDM and controls for TAC and TOS measurement, and OSI was calculated. IDM were divided into two groups, either of mothers treated with insulin during pregnancy or of those treated with a carbohydrate-restricted diet.

Results: Thirty-six IDM and 14 infants born to non-diabetic mothers were enrolled. Infants of insulin-treated mothers (group 1) and infants of mothers managed with a carbohydrate-restricted diet (group 2) had significantly higher TOS (p<0.001 and p=0.001, respectively) and OSI (p<0.001 and p=0.001, respectively) levels compared to controls. However, TAC levels were similar in all three groups. Maternal HbA1c values were correlated to TOS (p<0.001, r=0.694) and OSI (p<0.001, r=0.683).

Conclusions: Oxidative stress is increased in IDM, and a significant relation exists between the degree of maternal hyperglycemia in pregnancy and oxidative stress in the newborn at birth.

pregnancy. This common condition occurs in approximately 7% (range 1%-14%) of all pregnancies (1). About 65% of these cases can be attributed to type 2 diabetes. Hyperglycemia is clearly recognized as the primary culprit in the pathogenesis of diabetic complications, but even maximum glycemic control is associated with the development of complications (2, 3). Complications of GDM mainly affect the newborn (prematurity, macrosomia, hypoglycemia, jaundice, respiratory distress syndrome, polycythemia, and hypocalcemia) (4). Hyperglycemia triggers the generation of various reactive oxygen and nitrogen species (5, 6). GDM is associated with a pronounced degree of oxidative stress in placental and umbilical cord tissues and also in the plasma of the mother and the newborn (7, 8).

The aim of the present study was to evaluate the global antioxidant status in infants of diabetic mothers (IDM) by measuring total antioxidant capacity (TAC), total oxidant status (TOS), and oxidative stress index (OSI) and to determine their relation with severity of maternal hyperglycemia.

Patients and methods

This prospective controlled study was conducted between March 2019 and November 2010. Infants born to mothers with GDM were enrolled. IDM were taken as controls. Exclusion criteria were chromosomal abnormalities, early-onset sepsis, perinatal asphyxia, and infants of mothers with pre-eclampsia and smoking habit.

Subjects

Pregnant women were screened for GDM at 24–28 weeks’ gestation using a 50-g oral glucose tolerance test (OGTT; Carpenter and Coustan criteria) (9). However, when risk factors, such as positive family history of diabetes, age older than 30 years, obesity [body mass index (BMI) ≥30 kg/m²], history of GDM, and history of macrosomia
Umbilical Artery Intima-Media and Wall Thickness in Infants of Diabetic Mothers

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Key Words
Umbilical artery intima-media and wall thickness • Infants of diabetic mothers • Maternal hyperglycemia

Abstract
Background: Large for gestational age (LGA) neonates who had been exposed to an intrauterine environment of either diabetes or maternal obesity are at increased risk of developing the metabolic syndrome. This can be explained by exposure to high glucose and insulin levels in utero which alter fetal adaptation and programming. Objectives: The aim of the study was to evaluate the onset of preclinical atherosclerosis in utero. Methods: We measured umbilical artery wall thickness (ruWT) in the third trimester by obstetric ultrasound and umbilical artery intima-media thickness (uIMT) in pathologic specimens of umbilical cords obtained shortly after delivery and investigated the relation between these measurements and serum insulin level and C-peptide level in cord blood and assessed insulin resistance with the homeostasis model assessment of insulin resistance (HOMA-IR) in infants of diabetic mothers (IDMs), i.e., the study group, which was divided into a large for gestational age group (LGA)-IDM group and an appropriate for gestational age group (AGA)-IDM group and compared with a control group.

Results: The LGA-IDM group had significantly higher insulin (p < 0.001), C-peptide (p = 0.018) and HOMA-IR levels (p < 0.001) compared with the AGA-IDM and control groups. The LGA-IDM group had significantly larger ruWT (p = 0.013) and uIMT (p < 0.001) compared with the AGA-IDM and the control groups. The LGA-IDM group had increased uIMT and ruWT that correlated with the severity of maternal hyperglycemia. Conclusions: Measurement of ruWT in the third trimester is feasible, reproducible and strongly correlated with pathological serum insulin, C-peptide in cord blood and HOMA-IR levels.

Introduction
The prevalence of both obesity and gestational diabetes mellitus (GDM) is rising worldwide. GDM is becoming an increasing health problem and one of the most common complications of pregnancy. The complications of diabetes affecting the mother and fetus are well known. Short-term fetal complications include miscarriage, fetal loss or congenital anomalies, macrosomia, shoulder dystocia, stillbirth, growth restriction and hypoglycemia [1]. Evidence from recent studies suggests that modifications
Expression of intercellular adhesion molecule-1 in umbilical and placental vascular tissue of gestational diabetic and normal pregnancies

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Abstract

Objective Expression of intercellular adhesion molecule-1 (ICAM-1), a marker of endothelial dysfunction leading to damaging vascular disorders, in umbilical and placental vascular tissue of gestational pregnancies was compared to non-diabetic controls.

Methods We included 32 pregnant women with gestational diabetes mellitus (GDM) and 28 women with normal ongoing pregnancies were taken as the control group. Pregnant women with GDM were selected from the ones who had glycosylated haemoglobin (HbA1c) values lower from 6%. CD54/ICAM-1 expression profile was evaluated by immunohistochemistry, and cellular localization was determined under light microscopy. The immunoreactivity was assessed using a four-tiered scale: 0–5% (0), 6–20% (+1), 21–50% (+2), 51–100% (+3).

Results In gestational diabetic patient’s umbilical artery, +1 immunostaining group was observed (62.5%), and in their placenta, the highest percentage was seen in the 0 immunostaining group (43.8%). Diabetic patient’s umbilical vein has the highest percentage in the +1 immunostaining group. In the control group, in both umbilical artery and vein, the highest percentage was seen in the +2 immunostaining group (46.4%) and their placenta has the +3 immunostaining group with the highest percentage (57.1%).

Conclusion The main outcome of our study was that, although underlying diabetes does have some effects on the pregnant mother, fears of endothelial dysfunction leading to damaging vascular disorders are probably unfounded in well-controlled GDM women.

Keywords Gestational diabetes mellitus · Endothelial dysfunction · Intercellular adhesion molecule-1 · Fetoplacental vasculature · Immunohistochemistry

Introduction

Gestational diabetes mellitus (GDM), affecting 2–5% of all pregnancies, characterized by glucose intolerance first recognized during pregnancy, is associated with significant short- and long-term disorders [1]. In these patients, perinatal mortality and morbidity related with abnormal carbohydrate metabolism is seen frequently in the short term and
Investigation of the correlation between 100 gram oral glucose tolerance test results and maternal leptin levels during pregnancy

Gebelikte oral 100 gr glukoz tolerans testi sonucu ile maternal serum leptin düzeyi korelasyonunun araştırılması

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Abstract

Objective: To investigate the correlation between maternal leptin levels and 100 gram oral glucose test (OGTT) results as well as the correlation between leptin levels and the development of gestational diabetes mellitus (GDM) and glucose intolerance during pregnancy.

Material and Method: 104 subjects with gestational weeks ranging from 24 to 32 weeks who had increased 50 gr OGTT values (>140) were included in this study. After the screening test, 100 gr OGTT was administered to the subjects. Sixty cases were selected from these subjects; twenty patients with one abnormal test result were identified as “glucose intolerant” group (Group 1), 20 patients with two abnormal test results were diagnosed with GDM (Group 2) and 20 patients with normal test results constituted the control group. The serum leptin levels of the groups were measured with enzyme linked immunosorbent assay (ELISA).

Results: The serum leptin level was 8.4±5.1 ng/ml for group 1, 5.1±5.3 ng/ml for group 2 and 6.3±4.6 ng/ml for the control group. Although serum leptin levels for group 1 and 2 was observed to be higher than the control group, the result was not statistically significant (p>0.05). This result did not change after adjusting for body mass index (BMI).

Conclusion: There is no statistically significant difference between leptin levels among three groups.

Key words: Gestational Diabetes Mellitus, Oral Glucose Tolerance Test, Leptin

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Özet

Amaç: Gebelikte maternal leptin seviyelerinin 100 gr oral glukoz tolerans testi sonucu ile gestasyonel diyabet veya glukoz intolerans gelişi ile korelasyonunun araştırılması.

Gereç ve Yöntemler: Gebeli 24-32 haftalar arasında olup 50 gr yüklemesi testi >140 mg/dl olan 104 vakada;color=blue>cağırlı dahi edildi.forma=italic>tarama sonrası 100 gr testi uygulandı. Altıns yaka seçildi ve tek değeri boyunca olan 20 hasta “glukoz intolerans” grubu (Grup 1) olarak adlandırıldı. İkinci degeri yüksek olan hasta GDM tanısı alındı (Grup 2). Sonuç normal olan 20 hasta ise kontrol grubu olarak sınıflandırıldı. Serum leptin düzeyleri ELISA ile ölçülüyor.

Bulgular: Serum leptin seviyeleri grup 1 için 8.4±5.1 ng/ml, grup 2 için 5.1±5.3 ng/ml ve kontrol grubu için 6.3±4.6 ng/ml idi. Grup 1 ve 2 dəki serum leptin düzeyleri kontrol grubuna göre yüksek olması da bu istatistiksel olarak anlamlı değildi (p>0.05). Sonuçlar vücut kilo indeksini ayarlamasyla yapıtıldığını sonra da değişmedi.

Sonuç: Her üç grup arasında serum leptin seviyeleri açısından anlamlı fark saptanmadı. (J Turkish-German Gynecol Assoc 2009; 10: 158-61)

Maternal serum ferritin and hemoglobin values in patients with gestational diabetes mellitus

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A number of studies have linked increased maternal iron store and high serum hemoglobin (Hb) levels in pregnancy with increased incidence of adverse pregnancy outcomes, such as pre-eclampsia, stillbirth, and perinatal mortality. A low maternal ferritin level decreases with advancing gestation, even when iron supplementation has been given antenatally. Luo et al. identified high maternal hemoglobin and ferritin concentrations as a risk factor for gestational diabetes mellitus (GDM), however, there is no consensus on what constitutes a high hemoglobin concentration.

A case control study in Chinese women with a body mass index (BMI) of more than 26 kg/m² has shown that those who developed impaired glucose tolerance during pregnancy, had significantly increased Hb concentrations compared with BMI-matched groups. In the non-pregnant population, an association between Hb values and red cell count with diabetes mellitus (DM) has been reported earlier. Diabetic subjects were found to have increased total red cell count compared with age and gender matched controls. Furthermore, it has been suggested recently that an elevated ferritin concentration is a part of the picture of insulin resistance. Since iron supplementation is often recommended to pregnant women, it is possible that iatrogenic iron excess can be induced in the non-anemic women. Therefore, the aim of this study is to clarify patients after the initial visit. Since all patients were treated with multivitamin, there is no difference between the groups. Patients having hemoglobin level less than 90 g/dL at any time during pregnancy were diagnosed to have anemia, and these patients were not included to the study or the control group. All subjects were screened for GDM using a 50 g, 1-h glucose load administered 24-28 weeks' gestation. A positive screening test (plasma glucose 2140 mg/dL) was followed by a 3-h oral glucose tolerance test (OGTT). Gestational diabetes mellitus was diagnosed according to the OGTT criteria of Carpenter and Coustan, by which after a 100 g oral glucose load, 2 or more of the following plasma glucose levels were met or exceeded: fasting 95 mg/dL, 1 hour 180 mg/dL, 2 hours 155 mg/dL, and 3 hours 140 mg/dL. Diabetic patients were managed with a diet restriction first, and after this treatment all patients were followed up for their preprandial and postprandial second-hour plasma glucose levels weekly. If the prepregnancy glucose level was over 105 mg/dL or postprandial second-hour glucose level was over 120 mg/dL, insulin treatment was given. Anamnestic, clinical, and anthropometric parameters were recorded. The gestational age was estimated by last menstrual period, confirmed by ultrasonography. All subjects were followed until delivery, labor was not induced, and so, this will not have an impact on the gestational age of the offspring, birth weight, and Appearance, Pulse, Company, Activity, and Respiration (Apgar) scores were obtained. Maternal weight gain during pregnancy was defined as the increase in weight from pre-pregnancy to weight at the last visit. Prepregnancy body mass index (BMI) (weight [kg]/height [m²]) was based on prepregnancy weight and maternal height. Prepregnancy weight at the initial visit. The women in both groups had the same socio-economic status and were non-smokers. Women with premenstrual disorders, multiple gestations, and renal or liver disease was excluded. At 28-30 weeks, after informed consent obtained, blood was taken for the study of maternal hemoglobin concentration, mean corpuscular volume, serum transferrin, and ferritin concentration (Microparticle: Enzyme Immunoassay, BM System of Abbott Laboratories, Abbott Park, IL), and insulin levels. The patients subsequently diagnosed to have
Relationship between serum uric acid, creatinine, albumin and gestational diabetes mellitus

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Abstract
Background: During normal pregnancy, plasma concentrations of creatinine and uric acid normally decrease as a consequence of their increased glomerular filtration. Hyperuricemia in pregnant women has been associated with several pregnancy complications. We researched the relationship between serum uric acid, creatinine and albumin levels in pregnant women with normal glucose tolerance and gestational diabetes mellitus.

Methods: A total of 112 patients were evaluated, 56 of whom had gestational diabetes. All of the patients had single estimations of serum uric acid, creatinine, albumin and liver enzymes carried out on booking between the 24th and 28th gestational weeks. The women were followed up throughout pregnancy.

Results: Significant differences were found between the two groups for maternal age, gravida, parity and maternal weight gain during pregnancy, but not for body mass index or blood pressure. Creatinine levels were significantly higher in the diabetic group than in the control group (56.6±5.18 vs. 43.4±5.1 mg/dL, 53.04±13.26 μmol/L vs. 38.01±8.84 μmol/L, p<0.001). Uric acid levels were also higher in the diabetic patients, but this elevation was not statistically significant (4.42±1.09 vs. 4.1±0.84 mg/dL, 260.78±64.31 μmol/L vs. 241.49±49.56 μmol/L, p>0.05).

There were no differences in mean albumin concentrations or liver function tests.

Conclusions: In this prospective study of Turkish women, we found that patients with gestational diabetes had significantly higher levels of creatinine than normal pregnant women.


Keywords: albumin; creatinine; gestational diabetes; uric acid.

the available data would suggest that the glomerular filtration rate and renal plasma flow increase by at least 50% during pregnancy, starting soon after conception and lasting until term (1). There are numerous causes for chronic renal insufficiency, including diabetic nephropathy. During normal pregnancy, plasma concentrations of creatinine and uric acid normally decrease as a consequence of their increased glomerular filtration. Hyperuricemia is considered by some investigators to be a component of the metabolic syndrome that reflects insulin resistance (2, 3). In several epidemiological studies, correlations between hyperuricemia and obesity, dyslipidemia, and diabetes have been reported (4, 5).

Insulin resistance normally increases during pregnancy and resolves upon delivery (6). The metabolic abnormalities of pregnancy underlying abnormalities of glucose tolerance and blood pressure. Gestational diabetes mellitus (GDM) develops in women who are susceptible, and typically resolves postpartum. This disorder is a risk factor for type 2 diabetes and hypertension in the long term (7, 8).

Women who have had GDM are seven-fold more likely than control subjects to develop type 2 diabetes 22-28 years later, and are also more likely to develop hypertension and hyperlipidemia (8, 9). Thus, in addition to being a risk factor for type 2 diabetes and hypertension, GDM also increases a patient’s risk of arteriosclerosis and coronary heart disease (10).

In the current study we compared the serum levels of uric acid, creatinine and albumin in pregnant women with normal glucose tolerance and GDM.

Materials and methods
The study group comprised 56 gestational diabetic patients and 56 normal subjects who were pregnant.

The study protocol was approved by the local Ethical Committee and all participants signed informed consent prior to sample collection. Women with hypertensive disorders, thyroid disorders, multiple gestations, or renal or liver diseases were excluded. Both groups were studied contemporaneously. All subjects were screened for GDM using a 50-g, 1-h glucose load commencing at 24-28 weeks of gestation.
Threshold value of glucose screening tests in pregnancy: could it be standardized for every population?

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Abstract

We aimed to determine a threshold value that perfectly demarcates women at high risk for gestational diabetes mellitus (GDM) in the Turkish population. One thousand gravid women of 24 to 32 weeks of gestation were given 50 g, 1-hour glucose screening tests. A 100 g, 3-hour glucose tolerance test (GTT) was performed on all patients whose screening test plasma glucose value was 130 mg/dL or greater. The sensitivity and specificity of each screening test value was found, and the GDM rate of each value was calculated. Three-hundred-and-five patients were identified for GTT and 66 were shown to have GDM with two or more abnormal values in GTT. The incidence of GDM was found to be 6.6%. The maximum specificity and sensitivity were met at 140 mg/dL. However, this value underestimated 12% of patients with GDM, and the lowest value for a positive GTT appeared to be 134 mg/dL. We recommend a 135 mg/dL threshold for GTT since this threshold accurately diagnoses almost all women with GDM while eliminating unnecessary GTT.

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Kadın Sağlığı SUAM

Gebeler İçin
Diyabet ve Obezite
Polikliniği