addition to being cost-effective. However, the long-term effects remain to be evaluated. Further studies are warranted to assess the impact of such program on cardiovascular health attitudes and behaviors.

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Changes of the immune status in pregnancies complicated by diabetes

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Diabetes mellitus (DM) is a group of metabolic diseases characterized by hyperglycemia resulting from defect in the insulin secretion, insulin action, or both. The chronic hyperglycemia of diabetes is associated with long-term damage, dysfunction and failure of various organs.[1] Gestational diabetes mellitus (GDM) is defined as any degree of glucose intolerance with onset or first recognition during pregnancy and in most cases resolves after pregnancy. Virtually, all new cases of diabetes in pregnancy are a transient form of type 2 DM. The prevalence of GDM in a given population is thought to vary in direct proportion to that of type 2 DM. This depends on the various demographic characteristics of the specific geographic population, including age and ethnic group, and is generally reported as 2-5%. Approximately 50% of women diagnosed with GDM during pregnancy develop overt type 2 DM.[1] Usually during mammalian pregnancy, large physiological adjustments are required in the mother. These changes result from signals passing between the conceptus (especially the trophoblast) and the mother throughout pregnancy. Immune adaptation is not required for the mother to cope with the fetus as an allograft. The lack of HLA antigens on the syncytiotrophoblast and the presence of only the non-classic HLA G antigen on the cytotrophoblast cells precludes the fetal trophoblast from playing any part in currently recognized types of allogeneic immune reactions. All these reactions depend on the cellular recognition processes associated with the major histocompatibility complex classes I and II, therefore, the maternal immune system fail to be stimulated by allogeneic trophoblast, but allogeneic trophoblast cannot be the target for otherwise armed maternal cytotoxic T cells. Furthermore, according to current understanding of the phenomenon of "major histocompatibility complex restriction," the absence of classic major histocompatibility complex antigens on the trophoblast will prevent the corecognition of any other form of cell surface antigens that it might express. So the mother is not "immunodeficient": but she remains immunocompetent throughout pregnancy.[2] This study was conducted on a 40 pregnant ladies in their third trimester of pregnancy who were admitted to the obstetrical ward in Al-Kadhmiya teaching hospital/ Baghdad from January 2005 to December 2005 for control of their blood sugar, 20 of them were diagnosed as gestational diabetes in current pregnancy (all of them had impaired glucose tolerance test), another 20 patients included in the study were known diabetic patients before pregnancy in their third trimester of pregnancy. Ten pregnant ladies comparable to the same age and gestational age, without any current or previous medical history for diabetes were taken as control positive group. And 10 non-pregnant ladies comparable to same age were taken as control negative. Cases with multiple pregnancies were excluded from the study. Blood sample (5 milliters of blood) were collected from each patient without anticoagulant, let to clot and then centrifuge at 3000 rpm for 5 minutes to separate the serum which was stored at -20^{0}C until used. Quantitative measurement of serum immunoglobulin (IgG, IgM, IgA) and complement (C3 and C4) were measured by single radial immuno-diffusion method (Bio meghrab

Table 1 - The concentrations of iimmunoglobulins (IgG, IgM, IgA) and complements (C3 and C4) in all groups.

Groups	Gestational diabetes mellitus (n=20)		Pregnant diabetics (n=20)		Control groups		
					Pregnant Positive control (n=10)		Non pregnant Negative control (n=10)
	Mean ± SD	*P* value	Mean ±SD	*P* value	Mean ± SD	*P* value	Mean ± SD
IgG mg/dl	267 ± 18.8	<0.01	253 ± 16.9	<0.01	277 ± 19.32	<0.01	410 ± 25.8
IgM mg/dl	11.4 ± 1.4	<0.01	10.5 ± 1.7	<0.01	34.5 ± 6.9	<0.01	40 ± 8.1
IgA mg/dl	225 ± 19.6	<0.01	189 ±18.8	<0.01	230 ± 20.3	<0.01	290 ± 23.8
C3 mg/dl	23.5 ±21.6	<0.01	55.12 ± 24.7	<0.01	114.5 ± 41.6	<0.01	138 ± 50.3
C4 mg/dl	10.5 ± 9.8	<0.01	12.2 ± 2.7	<0.01	32.6 ± 12.7	<0.01	28 ± 14.2

kit). Concentration is determined according to the manufacturer's protocol. Statistical analysis were carried out using t- test, P value of a level less than 0.05 was considered statistically significant. Level of IgG, IgM and IgA and C3, C4 in the maternal serum were assessed and compared with the control positive and negative group. The serum levels were decreased in cases of diabetes and gestational diabetes also in healthy pregnant mothers it was statistically significant as shown in **Table 1**. In this study, the humoral immunity (IgG, IgM, IgA) and complements (C3, C4) were found to be decreased in pregnant women and there is further decrease in cases complicated with diabetes when compared to non-pregnant healthy women. It has been observed that the high levels of sex hormones (particularly progesterone) which exist during pregnancy induce a state of immune suppression and specifically humoral immunity. This is logically assumed to be required in order that the pregnant woman not reject the fetus, which, after all, is a "foreign object". Gestational diabetes and insulin-dependent diabetes are characterized by distinct pathophysiological mechanisms. However, their presence in pregnancy poses similar risks to the fetus. It is possible that factors common to both diseases are responsible for the increased morbidity and mortality in the offspring of such pregnancies. In a study carried out by Galbraith et al on placentae from insulin-dependant diabetics revealed large quantities of complement components C4 and C3 in the intervillous spaces and trophoblast found in placentae from insulin-dependant diabetics, suggesting that glucose tolerance in pregnancy, even of minor degree, is frequently associated with immunopathological processes that are reflected in the placenta.[3] A cross-sectional study carried out by Engstrom et al on diabetic men reported strong correlations between plasma levels of complement C3, insulin and glucose are associated with development of diabetes.[4] Another study concluded that humoral immunity is more deranged in type 2 DM compared with type 1 DM. Probably as a result of hyperinsulinemia associated with insulin resistance,[5] while another studies which is goes with our study, found that different disturbances in humoral innate immunity have been described in diabetic patients (low complement factor-4, decreased cytokine response after stimulation),[6] the maternal immune response may be modulated away from cellular responses towards humoral immunity, not all of which depends on recognition of major histocompatability complex antigens.[7]

In conclusion normal pregnancy results in a significant change in certain key cells that make up the body's immune response. These cells prepare the mother to fight off infection, yet protect the growing fetus from being rejected as a foreign invader, diabetes also associated with immune disturbance which is further compromised if it complicate pregnancy wither gestational, type 1 DM or type 2 DM.

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A high rate of caesarean section at a newly opened university hospital

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Cesarean delivery is a common obstetric procedure. Approximately one in 4 pregnant women will deliver by cesarean section.[1] It is questionable if this high rate is associated with a decreased perinatal mortality rate.[2] However, it is certain that cesarean sections are associated with an increased rate of maternal mortality and morbidity.[3] The risk factors for having a cesarean section varies. The high incidence of cesarean section has been the cause of intense debate and analysis. While it is generally accepted that the overall incidence of cesarean section is high, it is felt that some cesarean sections are unnecessary.[4] A cut down on cesarean sections performed for indications were possible wide inter-observer variation may exist could have a noticeable impact on attempts at reducing the cesarean section rates. The purpose of our study was to determine the statistical status of these variable rates of indications for cesarean section in our population.

We conducted a retrospective review of the hospital obstetric records of all women who had a cesarean delivery between 1st January 2004 and 31st December 2004 at King Abdullah University Hospital (KAUH) of the Jordan University of Science and Technology in Irbid, North Jordan. This is a community-based tertiary referral center with a patient population cared for by public-sector specialist, university teaching staff physicians, obstetrics and gynecology residents. For the same period a similar review was conducted of all women who had a cesarean delivery at Princess Badea Teaching Hospital (PBTH) in Irbid, North Jordan, a National Health Service maternity hospital open to the general population. It is staffed with public-sector obstetrics and gynecology specialists and residents. Cesarean delivery indications were recorded for all deliveries. When more than one indication was found, a single diagnostic classification was assigned for statistical analysis. Demographics and significant aspects of the obstetric history were recorded. Antepartum obstetric complications were identified, including chronic hypertension, preeclampsia, preterm labor, premature rupture of membranes, preexisting and gestational diabetes, asthma and thyroid disease. Factors that could have an impact on the need for cesarean section were reviewed, which included the use of oxytocin (for either augmentation or induction), epidural anesthesia and amniotomy. Cervical dilatation at the time of primary cesarean delivery was also recorded. Fetal outcome variables were recorded. These included fetal weight and Apgar scores. During the time interval between 1st January 2004 and 31st December 2004, there was a total 1010 deliveries in KAUH. Of whom 368 had cesarean delivery (36.43%). Of these, 146 (39.7%) were elective and 222 (60.3%) were emergency procedures. Of the total number of patients who underwent cesarean section, 58% had booked for their antenatal care and delivery at the hospital, 23.9% were self referrals; the remaining 18.1% were referrals from other hospitals. There were 8362 deliveries at PBTH with a cesarean section rate of 18.32%. Elective cesarean delivery was performed in 22.1% of cases while emergency cesarean section was performed in 77.9% of cases. The leading indication for surgery was 2 or more previous cesarean section (4.24%), followed by fetal distress (2.76%), breech presentation (2%), failure to progress in labor (1.94%) and severe pre-eclamptic toxemia (PET) (1.04%). Sixty-five percent of patients had booked for their antenatal care and deliveries at the hospital, 25% were self referrals; the remaining 10% were referrals from other hospitals. The list of indications and the corresponding number of patients for the 2 hospitals is presented in **Table 1**. The leading 5 indications for surgery were 2 or more previous cesarean section (6.63% for KAUH and 4.24% for PBTH), followed by fetal distress (5.44% for KAUH and 2.76% for PBTH), breech presentation (3.96% for KAUH and 2% for PBTH), failure to progress in labor (3.46% for KAUH and 1.94% for PBTH) and severe PET (3.46% for KAUH and 1.04% for PBTH). All these indications were statistically significant ($p<0.001$). Cesarean deliveries occur for a variety of indications; thus, some factors are amenable to intervention strategies for reduction of the overall rate. Patient characteristics and indications leading to cesarean delivery are heterogeneous.[5] The