Clinical and Experimental Health Sciences

The Frequency of Impaired Oral Glucose Tolerance Test (OGTT) in Pregnant Women Aged Under 35 Years

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ABSTRACT

Background: Prenatal impaired glucose tolerance has become a serious issue in the context of the maternal and neonatal complications it contributes. Although one of the traditional risk factors is maternal age, newly developed evidence indicates that younger pregnant women especially among South Asians are also capable of demonstrating significant metabolic vulnerability. The data on glucose intolerance among this age group on the local level is needed to inform the screening measures in the high-risk areas like Pakistan.

Purpose: To establish the prevalence of impaired oral glucose tolerance test (OGTT) results in pregnant women who are below the age of 35 years having regular antenatal care.

Methods: The study was a descriptive cross-sectional study that took place in the Department of Obstetrics and Gynecology at Baqai Medical University, between August 2025 and Dec 2025. The non-probability consecutive sampling was used to enroll 1150 pregnant women aged below 35 years and had singleton pregnancy with a gestational age of 24-28 weeks. Women with pre-existing known diabetic conditions and chronic systemic illness were not included. The standardized OGTT (75g) was performed on all participants after an overnight fast. The plasma glucose samples were taken at the fasting, 1 hour and 2 hours after glucose load. WHO/IADPSG diagnostic criteria were used for impaired OGTT. The demographics, BMI, parity, and family history of diabetes were documented and the data analyzed using the descriptive and inferential statistics.

Findings: A total of 1158 subjects had OGTT results shown to be impaired in 330 women (28.7). The most prevalent abnormality was Fasting hyperglycemia (20.9%). Students whose OGTT was impaired were very high in overweight/obese women (41.2%), multiparous (34.1%), and those with family history of diabetes (39.3%).

Conclusion: The percentage of younger pregnant women having impaired glucose tolerance was significant, which means that the age under 35 cannot be classified as a low-risk group. Universal OGTT screening can be better than risk-based strategies in high-risk populations.

Keywords: OGTT impairment, gestational diabetes, pregnancy, Baqai Medical University.

INTRODUCTION

Hyperglycaemia initially diagnosed during pregnancy, and whose levels are lower than those of overt diabetes, has since been identified as the most widespread medical complication of pregnancy in the world, and is known as gestational diabetes mellitus (GDM) [1]. Modern estimates indicate that this burden affects about 14 percent of all pregnancies, and is increasing proportionately with the growing rate of obesity and type 2 diabetes, as well as with the increasing rate of metabolic disease onset and accelerating urbanisation, particularly in low- and middle-income countries[1,2].

Along with its prevalence, GDM is clinically relevant in that even trivial increments of maternal glucose are linked to augmented risks of hypertensive disorders during pregnancy, caesarean delivery, macrosomia, and large-for-gestational-age offspring, including once the most vital variables have been taken into account [3]. In another recent review, GDM and preterm birth were found to be strongly related to other perinatal complications, compelling the importance of early diagnosis. These transient effects are matched by long-term outcomes: women with a history of GDM are at up to seven times increased risk of developing type 2 diabetes, and their children are at an increased risk of developing obesity and dysglycaemia in adulthood, in an intergenerational cycle of metabolic damage.[1,2,4].

The essential Hyperglycemia and Adverse Pregnancy Outcome (HAPO) study has determined that the association between the maternal glucose level at 24-32 weeks of gestation and the presence of adverse maternal-child outcomes is linear with no apparent glycaemic cut-off point beyond which no risks are observed[5]. Higher odds of birthweight above 90 th centile, cord C-peptide elevation, neonatal adiposity and clinical neonatal hypoglycaemia were each independently correlated with increasing fasting, 1-hour, and 2-hour glucose on the 75-g oral glucose tolerance test (OGTT). Developed on the basis of such data, outcome-based diagnostic thresholds were suggested by the International Association of Diabetes and Pregnancy Study Groups (IADPSG) and have since been embraced or modified in international and national guidelines.[6,7].

In 2013, the World Health Organization (WHO) approved criteria on hyperglycaemia first diagnosed in pregnancy, which relied to a large extent on HAPO and IADPSG guidelines, denoting overt diabetes in pregnancy and GDM diagnosed by a one-step 75-g OGTT. These standards were to normalise diagnosis across different countries, although later analyses have found that less restrictive criteria detect a greater number of women at risk of hypertensive disorders, macrosomia, and large-for-gestational-age births, but it results in increased resource consumption and over-medicalisation. In that regard, the notion of the impaired OGTT that involves any deviant OGTT values, including the ones that fulfill the formal GDM criteria and the ones that fall within the intermediate impaired glucose tolerance range, is clinically appropriate since HAPO indicates that even lower levels of hyperglycaemia can induce measurable risk[5,7].

Although there is a general consensus that GDM is an illness, which needs to be screened and treated, there has been global disparity in screening measures. Guidelines suggest universal (1-step 75-g OGTT) or selective (risk-factor-based) screening of asymptomatic pregnant persons, with selective screening, such as screening at or after 24 weeks of the pregnancy, having moderate effects on maternal and neonatal outcomes, and others suggest universal screening in all pregnant persons regardless of their symptoms[2,8,9]. Nonetheless, the USPSTF did not conclude with adequate evidence on whether the benefits and harm of pre-24 gestation screening outweigh one another[9].

Clinical cohort data suggest that a significant percentage of women with GDM can be missed by selective screening conducted based on risk factors. Risk-factor-based screening would have missed a third of women with GDM in a Nigerian study that compared universal versus selective screening to 1 step 75g OGTT screening at 24-28 weeks (Nigeria).[10] The same has been observed in other contexts, especially in those with high underlying risk of glucose intolerance whereby traditional low-risk criteria (younger age, normal body mass index, no family history) may not be effective at identifying women at risk [2,7,10].

A fast epidemic of type 2 diabetes is in the centre stage in the South Asian region. The number of adults with diabetes has increased at an alarming rate in Pakistan, which now boasts one of the highest diabetes prevalence rates globally, with the incidence of unidentified dysglycaemia or high risk of GDM in pregnant women in Pakistan having risen to alarming proportions during the past twenty years (11,12).

Simultaneously, there is emerging evidence that GDM is very common in Pakistan. In a 2024 systematic review and meta-analysis, the pooled prevalence of GDM was estimated and was focused on urban and tertiary-care environments, and remains relatively comparable with highly prevalent rates in many other low- and middle-income countries;[13] Heterogeneity in diagnostic criteria, screening strategies (one-step or two-step OGTT; selective or universal), and the gestational age at the time of testing were also noted to be characteristic of the review and made it hard to compare studies directly. The evidence of variability in thresholds and protocols can produce under- and over-estimation of the disease burden and make it challenging to plan services and distribute resources.

Local practice can be further informed through hospital-based Karachi and other urban centres studies. A tertiary hospital in Karachi has demonstrated that even basic fasting capillary blood glucose level by glucometer could be a reasonably sensitive screening method in GDM but OGTT was the diagnostic test of the day[15]. In more recent studies, the quality-of-care assessments of Pakistani maternity units have also identified unmet guidelines implementation, inconsistent records of OGTT outcomes, and difficulties in providing relevant postpartum follow-up to GDM women. These results indicate that a large number of women with impaired OGTT can be either untreated or mis-treated in the mainstream.

The key issues in the perception of GDM risk are ethnicity and age. The propensity to develop GDM has been less among women of European ancestry than South Asian women, with lower body mass indices and age, which is due to differences in insulin resistance, beta-cell functionality, and post-diagnosis adiposity losses[1,2,16]. A qualitative study conducted on South Asian immigrant women in Australia reported that GDM has been affecting up to 14-19 percent of pregnancies in some ethnic groups, with women reporting a high degree of problems with self-management of their diets and a feeling of losing control of their pregnancies after GDM Simultaneously, risk-stratification models of most Western systems continue to consider age under 25-30 years, especially in the absence of obesity or family history, as an indicator of low GDM risk.[9]. This paradigm might be inappropriate in those locations that are characterized by earlier onset of diabetes and an increase in overweight and obese young women.

Of interest especially is the overlap of high ethnic or regional risk and young maternal age. Pregnancy among a woman below the age of 35 year is a common occurrence in Pakistan and other South Asian nations whereby such a woman is traditionally considered to be relatively low-risk of developing metabolic complications as opposed to older gravidae. The ethnicity of South Asians, emerging trends of overweight and obesity, inactive lifestyles and a family history of diabetes may however nullify or cancel the purported protective impact of younger age though this age is an important proportion of the obstetric population[13]. The Pakistani data tends to be less age stratified in its reporting of GDM, and few studies have specifically studied women aged under 35 years. Consequently, the reality of the impaired OGTT frequency in younger pregnant women, as well as the sensitivity of the existing screening measures toward the identification of this impairment, are not well characterised.

Regarding the public health system, it is vital to determine impaired OGTT among younger pregnant women due to various reasons. To begin with, these women might have numerous subsequent reproductive years, thus, the inability to detect and treat dysglycaemia in a single pregnancy could lead to a cumulative effect in the course of the several pregnancies. Third, maternal metabolic risk at a young age raises the risk of obesity and glucose intolerance transmission to the child, which further perpetuates intergenerational cycles of cardiometabolic disease in already vulnerable communities, due to lack of access to lifestyle counselling, early diagnosis of type 2 diabetes, and cardiovascular risk prevention [1,3,4,11].

In this context, Karachi is a big and highly populated metropolis that has various socioeconomic backgrounds, food habits, and access to health care hence an informative environment through which to study the burden of impaired OGTT in pregnancy. Baqai Medical Universityis a tertiary care teaching hospital with a varied obstetric population and institutional screening procedures of GDM by 75g OGTT. Nonetheless, there is limited local data summarising the frequency of impaired OGTT in women with the age group of under 35 years. Majority of the available Pakistani studies take all reproductive ages together or indicate mean age without stratification which makes it hard to conclude that there is risk in women who are young.

The current research project to fill this knowledge gap is planned to be carried out in a Department of Obstetrics and gynecology at Baqai Medical University, between August 2025 and Dec 2025 to estimate the frequency of impaired OGTT among the pregnant women below the age of 35 years. To the extent of this paper, impaired OGTT includes any abnormal plasma glucose on the normal 75g OGTT, both that meets diagnostic criteria to determine GDM and that which is indicative of impaired glucose tolerance below the diagnostic level of overt diabetes. This research attempts to produce locally specific data in an urban environment in South Asia (high-risk), with a relatively young obstetric population, to assist in policy-setting (screening policies) along with allocation of resources and other preventive actions taken at an early age by women and their children.

METHODOLOGY

This is a descriptive cross-sectional research that was carried out in the Department of Obstetrics and Gynecology, Baqai Medical University, between August 2025 and December2025). Non-probability consecutive sampling method was used to recruit 1150 pregnant women below the age of 35 years who came to seek routine antenatal care. The inclusion criteria were that the participants had to be women aged 18 to 34 years, have singleton pregnancies and the gestational age of 24-28 weeks based on the last menstrual period and the use of ultrasound. Women with established history of type 1 or type 2 diabetes mellitus, chronic systemic disease like renal disease, hepatic dysfunction, chronic hypertension and autoimmune diseases were excluded to have a homogenous study population and prevent confounding metabolism factors.

Demographic and clinical data were collected following written informed consent and this consisted of age, parity, gestational age, body mass index, family history of diabetes and applicable obstetric history. A standardized 75 gram oral glucose tolerance test (OGTT) was conducted in all the registered participants as per the WHO/IADPSG guidelines. The participants were asked to take a minimum of three days before testing to continue with their normal diet and take an overnight fast of 8-12 hours. On reporting to the antenatal clinic, a fasting venous plasma glucose sample was taken and 75grams of anhydrous glucose in water given to the patient, which she drank in five minutes. One and two hours after ingestion of glucose, venous blood samples were then taken. The laboratory of the hospital analyzed all the specimens by enzymatic glucose oxidase method to be precise and reliable.

Incident case was considered OGTT impairment, where any abnormal glucose level of the following standards was met or exceeded: fasting plasma glucose 92 mg/dl, 1-hour glucose 180mg/dl and 2-hour glucose 153mg/dl in accordance with WHO/IADPSG. Women who met one or more of the criteria were considered impaired OGTT, including gestational diabetes mellitus and milder grades of glucose intolerance. All the data were typed and processed in Statistical Package of the Social Sciences (SPSS version 26.0). Quantitative data like age, gestational age and glucose levels were presented as mean + SD and categorical data like parity, family history of diabetes, BMI levels and impaired OGTT status were represented as frequencies and percentages. The impairment of OGTT

frequency was determined as the ratio of diseased people to the total number of the sample. The chi-square test was used to test associations between impaired OGTT and the selected risk factors, and a p-value of 0.05 or less was regarded as significant. The institutional review board of Baqai Medical Universitygranted ethical approval of the study and the data of the study participants was kept confidential.

RESULTS

The study involved 1150 pregnant women who were below the age of 35 years. The average age of the mothers was 27.4 +3.8 years and the average gestational age at which OGTT was tested was 26.1 + 1.4 weeks. Out of the respondents, 48.7% (n = 560) were primigravida whereas 51.3% (n = 590) were multigravida. These were 26.8 ± 4.3 kg/m 2 with 41.7 having been categorized as overweight and obese (n= 480). The women who reported a positive family history of diabetes mellitus were 33.4% (n = 384).

Among the 1150 individuals surveyed, 330 out of 1150 were women (28.7%), who had poor OGTT outcome and 820 out of 1150 women (71.3%), who had normal glucose tolerance. In the impaired OGTT group, 20.9 (n = 240) of the total population had high levels of fasting glucose, 15.6 (n = 180) had high levels of 1-hour, and 9.6 (n = 110) had high levels of 2-hour plasma glucose; a high percentage had more than one of these values. The total sample population of 210 out of 1000 (18.3 percent) was found to have the diagnostic levels of gestational diabetes mellitus (GDM), and the rest (10.4 percent) were found to fall under the range of impaired glucose tolerance levels, but not full GDM levels.

Additional examination revealed that dysfunction in OGTT was much more common in overweight/obese females (41.2% vs. 19.6, p = 0.001). Multiparous women were also found to have a more prevalent abnormal OGTT result (34.1%), than primigravidae (22.8%), and the difference is statistically significant (p = 0.004). This same pattern could be observed with women who had a positive family history of diabetes showing a significantly higher prevalence of impaired OGTT (39.3) than women who did not have a positive family history of diabetes (23.2), (p = 0.001). There was no substantial linkage between maternal age (between the 18 and 34) and OGTT abnormality.

The results show that although women were younger than 35 years, a significant percentage of those were impaired by glucose tolerance, and thus, screening of OGTT should be done regularly among mothers in this younger age.

Table 1. Baseline Characteristics of Participants (n = 1150)

Variable	Mean ± SD / n (%)
Age (years)	27.4 ± 3.8
Gestational age (weeks)	26.1 ± 1.4
Primigravida	560 (48.7%)

Multigravida	590 (51.3%)
Mean BMI (kg/m²)	26.8 ± 4.3
Overweight/Obese	480 (41.7%)
Family history of diabetes	384 (33.4%)

Table 1 includes the demographic and clinical characteristics of the 1150 pregnant women who were included in the study. The average age of the respondents was 27.4 years which is relatively a young population in obstetrics considering the fact that the study was on women below the age of 35 years. The mean gestation age, with which the OGTT was done, was 26.1 weeks and this falls within the advised period of 24-28 weeks.

The parity distribution was almost even with the primigravida women comprising of 48.7 percent of the cohort and multigravida women constituting 51.3 percent. The average BMI was 26.8 kg/m 2, which implies that most women were in the overweight range; actually, 41.7 percent were in overweight and obese category. This fact is noteworthy, as the fact of elevated BMI is a well-reported risk factor related to the development of impaired glucose tolerance during pregnancy. Also, 33.4% of the participants gave a positive family history of diabetes, which also increases the likelihood of developing diabetes in the sample.

Overall, Table 1 indicates that although the women were under the age of 35, a considerable percentage of them had risk factors including high BMI and family history that could predispose them to impaired OGTT.

Table 2. OGTT Results of Study Participants

OGTT Classification	**n**	**%**
Normal OGTT	820	71.3%
Impaired OGTT (Total)	330	28.7%
• Abnormal Fasting	240	20.9%
• Abnormal 1-hour	180	15.6%
• Abnormal 2-hour	110	9.6%
GDM (meets full criteria)	210	18.3%
Impaired Glucose Tolerance (non-GDM)	120	10.4%

The results of oral glucose tolerance test are summarized in Table 2. Among 1150 participants, 820 (71.3) had normal OGTT and 330 (28.7) had impaired glucose tolerance.

The abnormalities were found in the impaired OGTT category as follows:

- Abnormal fasting glucose: 20.9%

- Abnormal 1-hour glucose: 15.6%
- Abnormal 2-hour glucose: 9.6%

These results show that the most frequent disturbance was the fasting glucose abnormalities.

Among the women whose results were impaired, 18.3 (n = 210) were found to have full-blown diagnostic profile of gestational diabetes mellitus (GDM), but 10.4 (n = 120) did not have GDM because their glucose level was below the diagnostic cutpoint. This difference is clinically relevant since even sub-diagnostic impairment could be related to negative maternal and neonatal outcomes.

Table 2 thus shows that close to one-third of young pregnant women demonstrated some levels of glucose intolerance and this supports the need to screen all women instead of using selective tests that are dependent on age.

Table 3. Association Between Impaired OGTT and Maternal Factors

Factor	Normal OGTT n (%)	Impaired OGTT n (%)	p-value
Normal BMI	480 (80.4%)	118 (19.6%)	0.001
Overweight/Obese	340 (58.8%)	238 (41.2%)	
Primigravida	433 (77.2%)	127 (22.8%)	0.004
Multigravida	387 (65.9%)	203 (34.1%)	
No family history	589 (76.8%)	178 (23.2%)	0.001
Positive family history	231 (60.7%)	150 (39.3%)	

Table 3 shows the correlations between impaired OGTT and the important maternal variables.

BMI and OGTT Outcomes: The percentage of impaired OGTT was significantly elevated in overweight and obese women (41.2) as compared to women of normal BMI (19.6), and the p-value was found to be statistically significant (0.001). This shows the existence of a close association between the increased BMI and the abnormal glucose metabolism during the pregnancy.

Parity and OGTT Outcomes: Impaired OGTT was found more in multi-parous women (34.1) than in primigravida women (22.8). The correlation was found significant (p = 0.004). This indicates that a higher level of parity could be linked to a higher metabolic burden or accumulation of risk, concerning prior pregnancies.

Family History of Diabetes: The prevalence of impaired OGTT in women with positive family history of diabetes was significantly high (39.3) than in women without any family history (23.2), with a p-value of 0.001. This observation supports the robust genetic and family-based role in the cause of metabolic dysfunction.

Generally, Table 3 indicates that BMI, parity and family history are all useful predictors of impaired OGTT in pregnant women who are under 35 years.

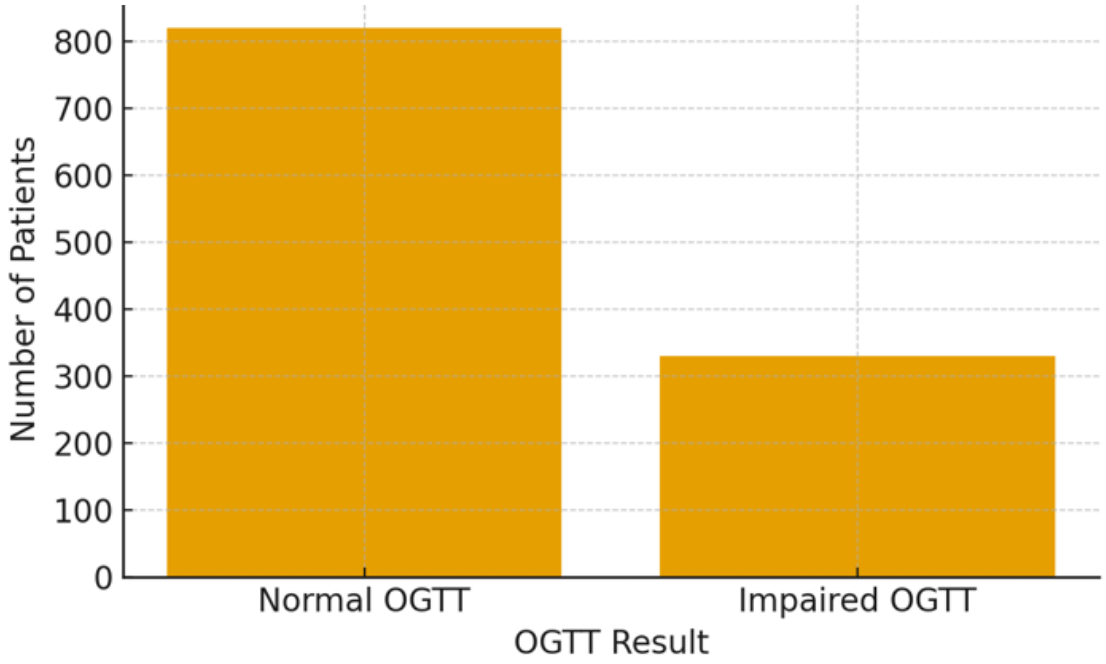

Figure 1 OGTT Outcomes in 1150 Pregnant Women

The graphical bar chart shows simple and easy visual analysis of OGTT results. The number of patients in each category is indicated by the height of every bar:

- Normal OGTT: 820 women
- Impaired OGTT: 330 women

The chart graphically highlights the difference between the two groups, that most of them had normal results, and a significant percentage, almost one out of three experienced impaired glucose tolerance at the time of pregnancy. This visualization is in support of the numerical results as it allows it to be easier to enjoy the percentage of affected women. The fact that the proportion of women with impaired OGTT is relatively high also supports the significance of the regular glucose screening in all pregnant women below the age of 35 and high-risk groups of South Asians in particular.

DISCUSSION

The results of the present research prove the fact that the OGTT impairment occurs in pregnant women of the age under 35 years, as 28.7 percent of the population has at least one abnormal glucose parameter. This rate is in agreement with the studies conducted on other South Asian groups, in which the metabolic risk profile is higher even in younger age groups of maternity age. It was demonstrated that South Asian women, especially, possess an

innately higher level of insulin resistance and lower level of compensatory insulin secretion in the β-cells, which makes them more prone to the development of glucose tolerance abnormalities at a younger age and lower weight index than the Western populations do [17,19].

The high prevalence of impaired fasting glucose (20.9) in this study is consistent with the prior evidence that fasting hyperglycemia represents the most frequent defect initially measurable in the South Asian women because it is a condition that is frequently predominated by high hepatic glucose production[18,20].

The strongest association was found between high BMI and poor OGTT where overweight women and obese women showed more than twice the occurrence rate of glucose impairment than normal-weight women. Our results confirm the role of excess adiposity in augmenting insulin resistance and decreased glucose disposal throughout pregnancy, and that overweight women have an increased risk relative to other ethnic groups because of the augmented visceral adiposity at lower body mass indices[17,22].

The present study also revealed that parity was closely linked with deteriorated OGTT. There was high prevalence (34.1) in multiparous women as opposed to primigravidae (22.8). A number of studies have argued that there may be cumulative metabolic stress induced by repeated pregnancy on 8-cell functioning especially in a context where postpartum follow-up and response to prior dysglycemia is inconsistent [21,23].

We found a close correlation between positive family history of type 2 diabetes with poor OGTT outcomes, in line with previous research findings that indicated that the former group is a group of very high risk within the under-35 population.

Our general prevalence (18.3) in gestational diabetes is in the higher end of recent Pakistani systematic reviews, which record prevalence of 9 per cent to 26 per cent based on criteria of diagnosis and study setting.[13,24]. Our results support the accumulating evidence that GDM is a serious and increasing problem in Pakistan even in younger women who can be easily missed in the risk-based screening process.

The findings also confirm the case of glucose intolerance in pregnancy as argued by the WHO and IADPSG, where even women with only mild levels of glucose intolerance are at risk of developing adverse pregnancy outcomes [5,25]. The HAPO follow-up studies indicated that women with mild levels of glucose intolerance can also benefit as to receive routine follow and lifestyle counseling to reduce immediate and long-term metabolic effects.

The results add to the research of local context of Karachi, in which the rapid urbanization, the absence of physical activity, and the shifting dietary habits have been contributing to an increased rates of metabolic syndrome and diabetes.[11,12,24] The combination of the risk factors of metabolic vulnerability of South Asian women and the environmental factors suggests that the tendency to impaired OGTT is not confined to older reproductive age categories.

The strengths of this study are that it has a large sample size, standardized protocol of OGTT, and is specialized in a younger population that has been ignored in the Third Trimester Diabetics studies. Nevertheless, there are some

limitations which should be considered. First, the research was undertaken in one tertiary-care facility, and it might not be generalizable to the rural or less urbanized populations. Second, the cross-sectional design is not able to make any causal inferences. Third, the study lacked follow-up of the patients to delivery thus, no associations between the impaired OGTT and pregnancy outcomes could be conducted. Future studies must involve a multicenter trial, longitudinal follow-up and investigation of lifestyle aspects that lead to early metabolic malfunctioning.

Finally, the research notes that impaired OGTT is highly prevalent in pregnant women who are below the age of 35 and that such predictors as BMI, parity and family history of diabetes are identified to be the key ones. These findings demonstrate the significance of universal OGTT screening among such high-risk groups like Pakistan in this age group. Timely diagnosis and treatment can help avoid maternal and fetal complications and minimize the risks of cardiometabolic problems in the long term.

CONCLUSION

The results of the present research show that gestational glucose abnormalities are highly common in pregnant women younger than 35 years of age, which means that younger women of childbearing age do not provide immunity against impaired OGTT in high-risk groups like Pakistan does. Almost one-third of the women reported some level of glucose intolerance and a large proportion of the women met the full diagnostic criteria of the gestational diabetes mellitus. The high correlations with high BMI, multiparity and family history of diabetes are indicative of the growing metabolic load of women in the reproductive age group and emphasize the additive effect of both genetic and lifestyle determinants. These findings support the necessity of considering the reevaluation of the premise that younger obstetric patients are automatically low-risk and the idea that universal screening plans can be more suitable in the South Asian context. Early diagnosis of impaired glucose tolerance is an important intervention opportunity, and it can diminish immediate pregnancy-associated complications as well as long-term metabolic risks to mothers and their newborns.

RECOMMENDATIONS

According to the results of the study, some recommendations can be made in order to enhance clinical practice and maternal fetal health outcomes. All pregnant women need to be subjected to universal OGTT screening regardless of their age with special emphasis on those areas with high baseline prevalence of diabetes. Prenatal counselling and weight-optimisation should be intensified to counter the risk factors that can be altered like high BMI that was strongly associated with poor OGTT. A targeted education and closer metabolic monitoring of women during the antenatal care should be recommended to women with either a positive family history of diabetes or those who have more than one procured pregnancy. Moreover, the follow-up services provided after

the delivery should also be strengthened to make sure that the presence of persistent glucose abnormalities will be detected and addressed early on and the long-term risk of developing type 2 diabetes will be minimized. Standardized OGTT protocol, better documentation and training of healthcare personnel can be implemented at the institutional level to increase the rate of detection and prompt referral to management. To sum up, additional multi-center and longitudinal institutions are suggested to determine the outcomes of pregnancy and the long-term metabolic processes of young women with impaired OGTT, thus making contributions to evidence-based national pregnancy diabetes screening and management guidelines.

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