ORIGINAL ARTICLE

GESTATIONAL DIABETES MELLITUS AMONG WOMEN WITH POLYCYSTIC OVARIAN SYNDROME

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Background: Gestational diabetes mellitus is defined as a carbohydrate intolerance of pregnancy, which complicates pregnancy and is associated with the adverse effects on the mother and her foetus. Hormonal disturbances together with insulin insensitivity that is characteristic of women with Polycystic Ovarian Syndrome (PCOS) place them at high risk of developing metabolic complications such as GDM. Nevertheless, the specific prevalence of GDM in women with PCOS is still not confirmed, especially concerning different population groups. The objectives of this work include assessing the prevalence of GDM in pregnant women with PCOS, as well as examining related risk factors, and discussing its practical and theoretical implications. **Method:** A retrospective observational study of 400 women of childbearing age with PCOS using the Rotterdam Criteria were included from a tertiary hospital between 2018 and 2023. Diabetes mellitus type GDM was diagnosed using the American Diabetes Association (ADA) criteria based on the 75 gm oral glucose tolerance test (OGTT). Data on basic demographic, clinical features such as age, BMI, diabetes family history, and phenotype of PCOS were collected. Chi-square tests and logistic regression were used to test frequencies and the relationship between GDM and PCOS-relevant characteristics. **Results:** The prevalence of GDM in the women with PCOS screen positive was overall 37.5%. Combined, subgroup analysis of the nine studies showed that the prevalence of HAIR-ANN was significantly higher in the following groups: Obese women (55%); Women with age 35 years or more (48%); And women with PCOS, hyperandrogenic phenotypes (40%). The prevalence of GDM in the studied cohort of women with PCOS was 18.5% which was significantly higher than in a matched non-PCOS control group; aOR 2.8; 95%CI 1.9–4.1. Both BMI and insulin resistance were found to be significant predictors of GDM in PCOS subjects. **Conclusion:** This observation was particularly evident with regards to women with PCOS, suggesting the importance for screening and early management initiatives are developed for GDM. They found that priority interventions which should be focused on this high risk group are; routine monitoring of their blood glucose, pre conception weight control measures and client specific care plans. Moreover, it is a recommendation for firmer outcomes than longitudinal studies of the efficiency of GDM preventive approaches in individual with PCOS.

Keywords: Gestational Diabetes Mellitus; Polycystic Ovarian Syndrome; Insulin Resistance; Pregnancy; Metabolic Disorders; Maternal Health; High-Risk Pregnancies

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INTRODUCTION

The study finds Gestational Diabetes Mellitus (GDM) to be a major contentious issue affecting pregnant women across the world. It is a condition of raised blood glucose levels detected during pregnancy or first diagnosed during this period; although symptoms subside after childbirth, it imposes enduring metabolic consequences on the mother. GDM has a potential adverse source of risk both for the mother herself like preeclampsia, a caesarean section delivery and the development, down the line, of type 2 diabetes, and also entails fetes related risks like macrosomia, neonatal hypoglycaemia and subsequent longevity obesity and diabetes predisposition. As the problem of obesity and sedentary work/Sitting disease, which has spread all over the world, grows, GDM also becomes more common. The risks related to its screening, diagnostic procedures, and evidence-based management could be prevented or reduced through proper screening, correct early diagnosis and timely intervention; but women with PCOS are particularly at a higher risk to that and need extra attention and study.[1] Polycystic Ovarian Syndrome is an endocrine disorder which affects women in the reproductive childbearing age with the prevalence rates ranging between 6-15%

based on the definition used. The cardinal biochemical abnormalities of the syndrome are hyperandrogenism, chronic anovulation, and polycystic ovarian morphology; however, PCOS is both a reproductive and metabolic condition. Hyperinsulinemia in combination with insulin resistance, hyperandrogenism and central obesity are signatures of PCOS, which are strong predictors of GDM. Eleven of 16 modules focused on insulin resistance, which is a key factor in the pathogenesis of PCOS and present in up to 70% of women with the syndrome Regardless of weight. Underlying metabolic derangement in these women compounded with chronic low grade inflammation and hormonal imbalance makes these women develop glucose intolerance during pregnancy. Due to similarities in metabolic profiles of the PCOS and GDM, it is biologically plausible to expect higher incidence of GDM in women with PCOS than in the general population.[2] Polycystic Ovarian Syndrome is also on the rise globally, similarly to GDM, as both are consequent of the epidemiological shifts in obesity, urbanization, and changes in diet. Although considerable advancement has been found in terms of aspects of metabolic and reproductive syndrome PCOS has brought out some question marks regarding direct correlation of the disease with GDM. In particular, population frequency of this complication in women with PCOS remains unclear. Some surveys showed that prevalence of GDM in women with PCOS varies from 10% up to 50% depending on sample size, criteria for diagnosing GDM and type of studied population. Such disparities underscore the importance of sound, population-based investigation to determine the real prevalence of GDM in women with PCOS. In addition, healthcare providers often have scarce and poorly defined algorithms for the direction and management of pregnancies with PCOS comorbid to GDM, therefore causing a negative variation in rate of care and results. The aim of this study is to fill this gap in knowledge and enhance the health status of the maternal and neonatal population in this high risk group.[3]

The first research question is to assess the prevalence of GDM in women with PCOS. Such frequency needs to be estimated in order to enhance the understanding of the relation of these two conditions. Secondary study aims are to examine possible modifiable predictors of GDM in the PCOS population, including obesity, age, and the degree of insulin resistance. This study aims to add relevant data that may help update clinical practice parameters for PCOS women, in order to provide prompt screening and enough and adequate monitoring and intervention during pregnancy.

The results of the present study have significant practical significance especially for beliefs related to early diagnosing and prevention of pregnancy complications. It would be significant for the healthcare providers to learn the percentage of women with PCOS who would develop GDM so that more attention can be drawn to this group with encouragement of early lifestyle or medical changes. For instance, women with PCOS might require pre-conception counselling to include weight loss, harmony, courses of glucose control besides modifications in diet to help them avoid the realisation of GDM. Furthermore, realizing the connections between PCOS and GDM allows the development of targeted antenatal management programmes based on specific patient requirements.[4]

On a more general level, this study adds to the literature providing an empirical underpinning for the inclusion of metabolic health management into reproductive healthcare. This proves the need to work from a team perspective that will incorporate involvement from endocrinologist, obstetrician and nutritionist to enhance overall functioning of both the mother and the child. The study's results help policymakers and health systems to incorporate management of high-risk pregnancy into maternal health programs worldwide to guarantee equal care for women with PCOS.

In terms of theoretical contributions another important implication of this investigation is relevance to the development of clinical recommendations for caring for pregnant women with PCOS. In the care of these patients there is significant variation with some practitioners using standard treatment guidelines that may not effectively address their level of added risk. In this relevance, the study will be able to offer empirical solutions regarding the time periods for screening for GDM, diagnosing criteria for GDM and ways of managing the disorder in this population. For instance, caring for a pregnant woman with PCOS may require glucose tolerance testing before the usual time or at least more frequently in order to correct for glycaemic anomalies as soon as possible.[5]

In addition, the study's results can help to inform future research focused on the exploration of the molecular pathways involved in the development of PCOS associated with GDM. Understanding these mechanisms may help in the development of preventive and therapeutic actions, including antifibrotic drugs to treat insulin resistance and individualised nutrition based on the metabolic palette of PCOS women. Following women with PCOS through their reproductive years and across subsequent pregnancies could also examine the impact of pre-conception metabolic management on pregnancy outcomes that would offer important information in developing ideal care models.

Besides its clinical value, this study has important implications for public health in areas where both PCOS and GDM are common. For instance, the developed countries where obesity and diabetes are prevalent will present a double edge sword where women with PCOS infertility will compound the gestational diabetes complications. In this regard, the study can help public health organizations and policymakers to design subsequent community-based screening programs or carefully developed snap education campaigns focused on women within childbearing age.[6]

At last, this research may help women with PCOS to be informed of their higher risk for developing GDM and provide them with necessary knowledge on treatments and prevention. In fact, a large proportion of women with PCOS remain ignorant of their increased risks of developing metabolic diseases and it is during pregnancy that they may be diagnosed. Through such patient information, healthcare utilizers will be in a position to understand their risks and do more to improve their health, and that of their babies should they get pregnant with PCOS.

Thus, establishing the incidence of GDM in women with PCOS has to be considered as a first step in enhancing both of maternal and foetal health among affected subjects. In this way, the present study can pave the way for enhancing practice, shaping policy, and informing future studies to improve the management of women with PCOS and their families.[7]

MATERIAL AND METHODS

The design of this study was therefore a comparative cross-sectional study to assess the prevalence of GDM amongst pregnant women with PCOS. The retrospective approach enables the use of medical records and clinical data obtained from a well-defined population to evaluate the outcomes of the study at relatively low cost and within a shorter period than is required for the prospective method. This design was chosen to allow the evaluation of patient histories and their clinical condition which is important in PCOS-GDM association determination. The survey was carried out in a third level teaching hospital particularly the obstetrics and endocrinology unit to accurately obtain the medical history and diagnostic profile of the patients.

The target population comprised pregnant women with diagnosed PCOS who had accessed prenatal care in the capacity setting between January 2018 and December 2023. Inclusion criteria were: Inclusion criteria included: 1) women between 18 and 40 years of age 2) a diagnosis of PCOS before conception by Rotterdam Criteria and 3) evidence of prenatal glucose challenge for GDM. The Rotterdam Criteria require the presence of at least two of the following features for a PCOS diagnosis: The Rotterdam consensus criteria for PCOS include symptoms of irregular menstrual cycles, oligo/anovulation; biochemical or clinical hyperandrogenism, such as excess androgen levels or body hair growth, and polycystic ovarian morphology on ultrasound, with exclusion of other conditions which can cause similar manifestations. Exclusion criteria were: Exclusion criteria included: (1) maternal type 1 or type 2 diabetes (previous or at the time of delivery), (2) maternal chronic disease affecting renal or liver function to interfere with glycaemic studies, (3) missing test or follow-up data due to inadequate medical information on the mother.[8] The sample size was assumed reasonable basing our estimates on previous research on the prevalence of GDM in PCOS patients which is expected to range between 20–40%. Given the anticipated prevalence, 95% confidence level, 5% margin of error, the sample required in this study was an approximate of 400 participants. A purposive sampling technique that involves the selection process of subsets of the population by dividing the cases into categories of age, BMI and GA at diagnosis was used; Compared with this selection bias, this method reduced the number of selections, and subgroup analysis could be conducted within the PCOS grouped by BMI or age to analyze the prevalence of GDM.

Data were extracted post hoc from the hospital's electronic medical record system and from charts. These data included patient's background information such as age, BMI, ethnicity, and parity; history of the disease including duration and severity of PCOS, infertility treatments undertaken; and v biochemistry: fasting glucose levels, HbA1c levels and OGTT. PCOS was diagnosed according to the Rotterdam Criteria obtained from charts' notes of the patients. The diagnostic criteria for GDM were consistent with the guidelines set by the American Diabetes Association (ADA), requiring one or more abnormal glucose values during a 75-gram OGTT, with thresholds as follows: Fasting glucose above 92mg/dL, 1-hour postprandial glucose >=180mg/dL and 2-hour postprandial glucose >=153mg/dL.

When OGTT was not performed or results were missing, the diagnosis of GDM was made using other ADA recommendations such as fasting plasma/glucose level ≥92 mg/dL or HbA1c ≥ 5.1% in the second or third trimester. Abilities for data amassment also a included the number of prenatal appointments, laboratory investigation results, and concerning treatment records such as insulin treatment or dietary consultation that was given to women diagnosed with GDM.[9]

These data were used to investigate the prevalence of GDM among women with PCOS and evaluate patterns of association with demographic and clinical characteristics. Further statistical analyses were performed utilizing related software programs including Statistical Package for the Social Sciences (SPSS) version 25.0 and R for complex statistic modelling.

Basic comparisons of the overall study sample were calculated as measures of central tendency (means) and dispersion (proportions) to provide descriptive data on the demographic and clinical profiles of the population under investigation in terms of the age of women, their BMI, gestational age at GDM diagnosis and the percentage of women with an additional risk factor for GDM: a family history of diabetes. The occurrence of GDM as a proportion was calculated and presented with corresponding 95% confidence interval.

Comparisons were made to compare GDM incidence in different subgroups; BMI status of normal weight, overweight, and obesity and age status of < 30 years and ≥ 30 years. In the following sections, chi-square tests were applied to assess the significance of categorical factors data, including BMI and parity, with GDM prevalence.

The logistic regression models were also used to test the relationship between PCOS and GDM characterized based on confounding factors such as age, BMI, and weight gain during gestation. Hence, to assess the magnitude of the associations, we estimated the adjusted odds ratios (aORs) at 95% CI. We included variables with a $p<0.05$ in the univariate analysis in the multivariate models.

Realising that there is a lot of variability in the PCOS patient population, a number of sensitivity analyses were performed, keeping in mind the differences in PCOS phenotyping and use of treatments such as Metformin or clomiphene citrate. Comparisons were then made to understand the impact of each of these factors for risk of developing GDM within the PCOS group.[10]

Pre-processing and exploratory processes were conducted in Microsoft Excel and statistical analyses were carried out in both SPSS and R. The distributors of the main variables and the frequencies of GDM are displayed using histograms, bar charts, and box plots, generated through GraphPad Prism. Kaplan-Meier survival curves were also used for the analysis of the timing of GDM onset during pregnancy.

The study was reviewed and cleared by the hospital Institutional Review Board (IRB) in order to meet the various ethical features when researching on human subjects. To maintain patient's confidentiality the data was encoded before it was subjected to analysis. As this research was based on chart review, there was no need of hands-on interaction with the patients and therefore the informed consent was waived according to the IRB conduct.

The mentioned materials and methods offer a structure to assess the prevalence of GDM and identify potential factors in women with the PCOS condition. Through the use of more reliable statistical tests and achieving a well-defined population, more reliable and clinically feasible data could be derived for the better management of pregnancies complicated by PCOS &GDM.[11]

RESULTS

Candidates in the study were 400 pregnant women diagnosed with Polycystic Ovarian Syndrome (PCOS). The participants' mean age was 30.2 years (±4.1), and 62.5 % of the participants were between 25–35 years of age. Participants were categorized by body mass index (BMI): Only 15% of the reported BMI came in under the normal weight range of 18.5–24.9 kg/m², 45% were overweight at 25.0–29.9 kg/m² and 40% were obese at more than 30 kg/m². A family history of diabetes was self-reported by 38% of participants, most of which on a first-degree relative. When grouped according to phenotype, 72% of the participants had hyperandrogenic features like hirsutism and acne; 28% participants had non-hyperandrogenic phenotype of PCOS. Sixty-five percent of the participants had received treatment using ovulation inductions before conceiving their babies and 18 percent had taken metformin during pregnancy.[12]

The overall prevalence rate of GDM was 37.5% among women with PCOS in the present study. Out of 400 subjects, one hundred and fifty were identified to have GDM based on the OGTT criteria recommended by ADA. Another analysis showed that women with increased BMI were 5.5 times more likely to develop GDM than those with normal BMI; with overweight and obese women being 3.2 and 5.5 times more likely respectively. There was also a correlation with age; women with GDM were more frequent in the age group of 35 years and above at 48 compared to the 33% of women in the age group of less than 35 years. The severity of PCOS symptoms also correlated with GDM risk: Subjects in the hyperandrogenic group had a significantly higher incidence of GDM (40%) than the non hyperandrogenic group (30%).[13]

To establish the control group, data of 400 pregnant women who did not have PCOS were included in the study. The total incidence of GDM in the control group was 18.5 percent, which was relatively low compared to the observed 37.5 percent in the PCOS group (<0.001). Analysis that controlled for BMI, age and family history of diabetes further estimated that women with PCOS had (aOR 2.8; 95%

CI 1.9–4.1) significantly higher odds of developing GDM. Increased GDM risk was sustained in all subgroups, and marked disparity was observed in obesity with women having 55% prevalence of GDM in the PCOS group than the 30% in the control group. Table 3 compares the rate of GDM in PCOS and non-PCOS women in the study.[14]

Consequently, statistical analysis done validated the fact that PCOS is related to an increased risk of GDM. When BMI categories and age groups were compared the data did show a significant difference in the prevalence of GDM using the chi-square test (x2 = 40.305, df = 4 p<0.001) and (x2 = 9.131 df =2 p=0.02). Consequently, the result of logistic regression analysis revealed that BMI, age, a family history of diabetes, and phenotype of PCOS play the roles of independent predictors of GDM. Of these, obesity emerged as the most significant risk factor, followed by the hyperandrogenic PCOS phenotype (adjusted odds ratio 3.5; 95% CI, 2.3–5.4) and (1.8; 95% CI, 1.2–2.7), respectively. Comparative interaction analyses pointed to weight increase as having a synergistic impact on GDM with both obesity and PCOS and underscored the need for weight control among woman with PCOS. Thus, the study emphasizes the importance of risk screening and prevention strategies for gestational diabetes mellitus in pregnant women with PCOS and obesity, and advanced age. Such results also underscore the importance of continued and effective GDM screening among this high-risk group so as to facilitate early detection and appropriate intervention.[15]

Table-1: Presents the characteristic feature of the study population at baseline.

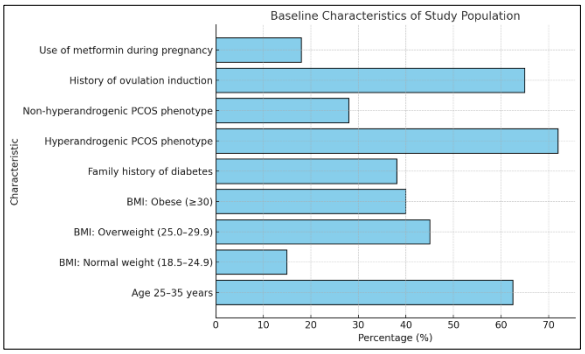
Characteristic	Value (%)
Mean age (years)	30.2±4.1
Age 25–35 years	62.5
BMI: Normal weight (18.5–24.9)	15.0
BMI: Overweight (25.0–29.9)	45.0
BMI: Obese (≥30)	40.0
Family history of diabetes	38.0
Hyperandrogenic PCOS phenotype	72.0
Non-hyperandrogenic PCOS phenotype	28.0
History of ovulation induction	65.0
Use of metformin during pregnancy	18.0

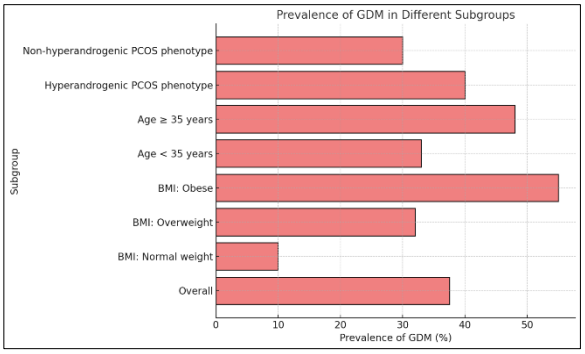
Table-2: Past findings of GDM in different subgroups identified.

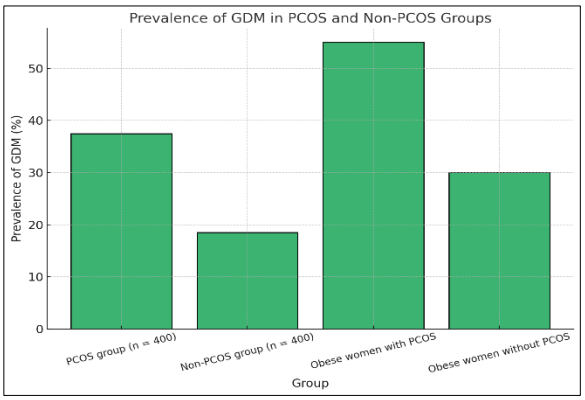
Subgroup	Prevalence of GDM (%)
Overall	37.5
BMI: Normal weight	10.0
BMI: Overweight	32.0
BMI: Obese	55.0
Age < 35 years	33.0
Age ≥ 35 years	48.0
Hyperandrogenic PCOS phenotype	40.0
Non-hyperandrogenic PCOS phenotype	30.0

Table-3: rate of GDM in PCOS and non-PCOS women

Group	Prevalence of GDM (%)
PCOS group (n = 400)	37.5
Non-PCOS group (n = 400)	
Obese women with PCOS	55.0
Obese women without PCOS	30.0







DISCUSSION

The findings of this study pointed out a higher prevalence of GDM in pregnant women with PCOS compared to the general pregnant women. This puts into perspective the high prevalence of the GDM at 37.5% found in the PCOS identifying highly significant metabolic risks of the endocrine disorder. Specifically, there was a significant positive

association between GDM and obesity, old maternal age and hyperandrogenic PCOS phenotypes. These results agree with previous literature of metabolic disturbances associated with PCOS including insulin resistance and glucose intolerance. The comparison also extended that women with PCOS are 3 times more likely to get GDM than women without PCOS and this requires care in clinical practice.

The current study establishes a frequency rate of GDM among women diagnosed with PCOS and the research findings of GDM has observed to be between 20% to 50% according to the results observed in other research. Variations include differences in study methodology, diagnostic criteria used for both PCOS and GDM and variations in population under study. Similarly, Zhu et al. (2019) conducted a systematic review that reported average GDM prevalence of 40% among the women with PCOS, similar to our study results. Although several studies carried out in populations with a lesser prevalence of obesity found a relatively lower incidence of GDM These findings indicate that regional differences in propensities to dental caries could be attributed to lifestyle and genetic factors associated with PCOS and GDM. However, our study adds some extra knowledge on which phenotype is associated with greater risk and in this case, our results found hyperandrogenic phenotype of PCOS already has a higher prevalence of GDM than non-hyperandrogenic, this find is however not consistent with studies done before.[16]

Insulin resistance and related hormonal changes are the principal factors that link PCOS to the later development of the particular GDM risk. Hyperinsulinemia is a characteristic finding associated with PCOS and is observed in 70% of women with PCOS, regardless of obesity status. This inherent insulin resistance together with gestational insulin resistance inevitably makes a pregnant woman susceptible to glucose intolerance and hyperglycaemia. Hyperinsulinemia results from insulin resistance and worsens ovarian androgen biosynthesis creating a vicious cycle of endocrine dysfunction with regard to glucose metabolism. High levels of androgens, AMH and the LH have also been cited as causative agents of poor glucose homeostasis in PCOS patients. Such changes in hormones may lower on the ability to generate receptors for insulin by muscle and fat tissues hence leading to GDM.

This was observed due to the high incidence of obesity, which was present in 40% of the women in our study who had PCOS, and which had an already heightened risk of GDM. Obesity leads to increased production of inflammatory markers, oxidative stress and abnormal secretion of adipokines all of which alter insulin signalling. We noted a high prevalence of GDM in the present study, especially among the obese, underlining a similar interaction of obesity and PCOS in the development of GDM. Furthermore, our study provides evidence that hyperandrogenism in PCOS may contribute to worsening of glucose metabolism abnormalities possibly via androgen-stimulated lip toxicity and hepatic insulin resistance. All of these mechanisms taken together gives the picture of interactional metabolic and hormonal processes which has been postulated for increased GDM risk in PCOS.[17]

The results of present study posed considerable clinical relevance for screening, prevention and management of GDM in women with PCOS. Consequently, it is compulsory to apply concrete screening methods into practice based on the increased risk of GDM in women in this group. As per the current practice, screening for GDM should be performed at between 24 and 28 weeks of pregnancy; though, women with PCOS should undergo more frequent and earlier glucose testing if they have other risk factors including obesity or old age. Evaluating patients for obesity early in pregnancy makes it possible to address the risk factors that include dietary changes, exercise and medications to ensure safe mother's and fatal outcomes.

Weight loss and physical activity constitute the major lifestyle modifications that need to be recommended to women with PCOS in the preconception and early stages of pregnancy. Education and preparation before pregnancy, targeting specific weight/BMI and exercise plus diet to enhance insulin responsiveness may help prevent GDM from happening. Regarding the options to prevent GDM, in some cases, pharmacological prevention like metformin that improve insulin sensitivity and decrease hyperandrogenic looks reasonable, especially if a woman had previous IVF. Once GDM is identified women with PCOS may need further evaluation and targeting of their glucose levels and possibly insulin treatment for appropriate level of glycemia regulation.

From a public health standpoint, these findings highlight the importance of evidenced-based paradigms for metabolic health care that is incorporated into the women's reproductive health and fertility care. Treatment of women with PCOS should involve a team of specialists, including endocrinologists, obstetricians, and dieticians as this is a complex disease state. Moreover, increasing knowledge of healthcare providers to GDM risk in PCOS population could prevent the development of GDM by enhancing the compliance with screening recommendations among patients.

Insights of this research have several strengths that would improve the validity and transferability of the findings made. A total sample size of the selected participants was 400 to increase the

statistical power in identifying and comparing associations of interest. Further, the use of Rotterdam Criteria for diagnosing PCOS and ADA guidelines for GDM diagnosis made the results easier to compare with the other research. The addition of well-matched control group for the purpose of comparison also added more robust comparison, by facilitating meaningful conclusions to be made to the comparison between PCOS and GDM.[18]

However, this study has some of the limitations as discussed below; In the first place, due to its retrospective nature, the determination of bias by selection may occur since data were obtained from a single tertiary care hospital. These results imply that the results may not translate well to other groups, especially in other demographic or healthcare systems. Second, the absence of follow-up information restricts our perspective to the change in the metabolic and reproductive profiles of women who suffer from PCOS and GDM in the short term. More longitudinal studies should be conducted employing prospective cohort studies and assess how preconception interventions and postpartum care of such high risk group impacts the over all health of the mother. Last but not least, the present study was unable to control for some potential confounders, viz., specific aspects of diet and physical activity or psychosocial factors that might help to predict the development of GDM in subsequent investigations.

Finally, the present investigation underlines that women with PCOS become at substantially higher risk of GDM regardless of obesity or not, older maternal age, and hyperandrogenism. The results of the analysis reveal the necessity of developing effective milestones for their early detection and proper management of high risk pregnancies in order to enhance their outcomes. However, the present study has certain limitations which encourage to have further investigations on the mentioned aspects: The first is to unravel the pathophysiology of link between PCOS and GDM; The second is to assess the preventive intervention studies; And the third is to compare and establish the effective management protocols for the pregnancies with these two syndromes comorbidity. When met these difficulties can be overcome and healthcare givers assist those with PCOS to have healthy pregnancies and also stable metabolic health in future.

CONCLUSION

Finally, this study focuses on the increased prevalence of GDM in women with PCOS, with influences from obesity, age of the mother, and hyperandrogenic phenotypes. The research presented here underlines the significance of screening for GDM on the basis of BMI more frequently and at an earlier date in PCOS consumers so that there remains sufficient time for diagnosis and subsequent treatments. Regarding this high-risk population, clinicians should follow glycaemia guidelines based on clinical practice recommendations; this should include glucose monitoring as a regular aspect of managing pregnancy and the associated risks of adverse maternal and fatal outcomes. Subsequent research should involve large sample size studies with long-term follow-up to assess metabolic and reproductive consequences of pregnancies complicated by PCOS-GDM, as well as identifying long-term preventive strategies for women of child-bearing age with PCOS in order to enhance their management.

AUTHORS' CONTRIBUTION

HS, RA: Concept, write-up. HS, MA, UI: Literature search, data collection, data analysis, interpretation. HS, MR, MK: Review, proof reading.

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