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RESEARCH ARTICLE
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A STUDY OF RISK OF ADVERSE PREGNANCY OUTCOMES IN WOMEN WITH PCOS

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ABSTRACT

Background-Polycystic ovary syndrome is the most common endocrine abnormality in adolescent and reproductive age group leading to chronic anovulation and infertility. After conception there is increased risk of gestational diabetes mellitus, preeclampsia, early birth and SGA babies in pregnant women and long-term consequences like cardiovascular, metabolic abnormalities and increased risk of endometrial cancer.

Objectives- To compare adverse pregnancy outcomes in women with and without polycystic ovary syndrome.

Methods- It is a prospective study conducted on 160 antenatal mothers of 20-40 yrs age group attending to OPD in government maternity hospital, Tirupati. They were divided into two groups- one group of women with history of excessive weight gain, hirsutism, irregular menstrual cycles [PCOS] and other group with women attending for regular antenatal checkups. After recruitment of subjects detailed history was taken regarding menstruation and mode of conception. Demographic, anthropometric and vital data noted. Clinical examination and laboratory tests were done. They were followed until delivery and the maternal outcomes including antenatal complications such as GDM, hypertension, hypothyroidism, preeclampsia, anemia and twin pregnancies were noted. Sample size was calculated for a 95% confidence interval and 5% margin of error and association between two groups was analyzed by chi-square test and students T test.

Results- Based on the findings in the current study, we conclude that women with PCOS are at higher risk of developing adverse pregnancy outcomes such as twin pregnancies, hypothyroidism, gestational hypertension, preeclampsia, gestational diabetes mellitus and increased risk of operative delivery and may also need assisted reproductive technology for conception when compared to women without PCOS.

Key Words- PCOS [polycystic ovary syndrome], Gestational diabetes mellitus, pregnancy induced hypertension, hypothyroidism, twin pregnancies, anemia, small for gestational age babies.

INTRODUCTION

PCOS or Stein Leventhal syndrome is the most frequent endocrinopathy in adolescent and reproductive-age women affecting 5% to 15%. Polycystic ovarian syndrome has no known cause or endocrine abnormality. Instead it is a complex illness where environmental and genetic variables interact and contribute to its pathophysiology[1].Since the obesity pandemic has spread more women are receiving diagnosis of PCOS and the population that is being evaluated for the diagnosis has increased due to the recent addition of ultrasound as diagnostic criteria. Polycystic ovarian syndrome is the most common cause of androgen excess and hirsutism in females. Symptoms of PCOS include oligomenorrhea or amenorrhea, acne, hirsutism and infertility. The disorder is characterized by chronic anovulation or extended periods of infrequent ovulation (oligo-ovulation). It is a syndrome primarily defined by excess androgen levels. PCOS does not currently have obesity as one of its diagnostic criteria. In fact approximately 20% PCOS women do not have obesity that is non-obese PCOS. Polycystic ovarian syndrome patients were more likely to have cardiovascular disease risk factors such as high blood pressure, abnormal lipid profiles, type 2 diabetes, anxiety and depression. Anovulation commonly precedes polycystic ovarian illness making conception difficult. In PCOS pregnant women early pregnancy loss is more prevalent. They may develop gestational diabetes, hypertension, preeclampsia, early birth and SGA babies. Numerous studies have examined the immediate and long- term consequences of PCOS on women's health highlighting the increased risk of late complications including elevated cardiovascular, metabolic and oncology risks as well as an increased frequency of early complications like worsening fertility and adverse obstetric outcomes. However these studies scope is constrained, and the outcomes are not entirely certain. Managing the metabolic and reproductive aspects of PCOS is essential for improving pregnancy outcomes. Therefore, we conducted this study to evaluate the incidence of pregnancy outcomes and obstetric outcomes in women with polycystic ovary syndrome when compared to women without PCOS in Indian population.

AIM OF THE STUDY

- Compare maternal outcomes in normal pregnant women and pregnant women with polycystic ovary syndrome at Government Maternity Hospital, Tirupati.

INCLUSION CRITERIA:

1. Women between 20 to 40 yrs of age with history of excess weight gain, irregular cycles or ultrasound-diagnosed polycystic ovaries attending antenatal OPD were included.
2. Recruited women were monitored from early pregnancy till delivery.

EXCLUSION CRITERIA:

1. Women with uterine anomalies.
2. Women with history of renal disease and heart disease.
3. Women with diabetes, hypertension and thyroid issues.
4. Women with other causes of hyperandrogenism such as CAH, malignant ovarian tumors, androgen secreting tumors, Cushing's disease and hyperprolactinemia.

METHODOLOGY-

One hundred sixty patients who satisfied the inclusion criteria for this research are included. Research began with institutional ethics committee permission. Study participants were 20–40-year-old prenatal mothers attending outpatient clinic at GMH, Tirupati. Subjects get research protocol details from the investigator informed consent is obtained. Demographic details such as Name, age, weight, marital status, parity, address, socioeconomic status and literacy were taken. Detailed obstetric, menstrual, family history and medical history of each patient were taken. All the study subjects were screened according to 'Rotterdam criteria' that is oligo/anovulation, hyper androgenisim features or polycystic ovarian morphology in ultrasound and assigned them into two groups. While Group S comprised pregnant women with irregular menstrual cycles (oligo or Anovulation), acne, hirsutism and

polycystic ovaries on ultrasonography, Group C included individuals who did not meet Rotterdam criteria. In a clinical examination, participants height, weight, blood pressure and BMI were recorded along with hyperandrogenism signs such facial hair and acne. Their pregnancy history, obstetric status, mode of conception was recorded. Their menstrual history was recorded in detail including the pattern of onset, duration of bleeding, the quantity of bleeding, and other associated menstrual concerns. After clinical examination all the participants underwent routine blood and serological investigations (i.e. Hemoglobin levels, blood grouping and typing, thyroid profile, glucose tolerance test, random blood sugar levels, viral marker screening and routine urinary examination]. All individuals were observed until delivery and the maternal outcomes including method of conception antenatal complications such as GDM, hypertension, preeclampsia, hypothyroidism, anemia and twin pregnancies were noted. Glucose intolerance develops commonly in pregnancy. At first antenatal visit DIPSI was done which is part of the GDM screening. GDM was diagnosed when blood glucose levels exceeded 140 mg/dL after two hours of 75gms of glucose intake irrespective of food intake [DIPSI]. Pregnancy-induced hypertension (PIH) occurs after 20 weeks of gestation when two or more episodes of blood pressure of 140/90 mm Hg or higher at least six hours apart occur with or without proteinuria of 300 mg or more per 24 hours.

OBSERVATIONS AND RESULTS

Statistical Analysis:

Categorical variable data values are represented as numbers and percentages. To test the association between the groups, a Chi-square test was used. Means and standard deviations indicate continuous variables. Using Student's T test, we compared the outcomes of the research groups. A P value less than 0.05 was deemed to have statistical significance. This cohort research included 160 20–40year-old prenatal mothers. Two research groups of patients were formed.

Group S: expectant mothers who met Rotterdam criteria [Irregular menstrual periods, acne, hirsutism, and polycystic ovaries on ultrasonography].

Group C: expectant mothers who are attending for regular antenatal checkups and did not have PCOS according to Rotterdam's criteria.

160 patients were evaluated in the study and the results were as follows.

DEMOGRAPHIC DETAILS

AGE OF CONCEPTION IN CURRENT PREGNANCY

In this research, the mean ± SD age of conception was 25.5 ± 3.7619 years for S group and 23.41 ± 3.4812 years for C group. A 0.0004 p value for Student's T test demonstrated statistical significance for age of conception between groups

Table 1 indicates the mean conception age of pregnant women in both groups. Women with polycystic ovarian syndrome conceived later than those without.

Table 1: Comparison of age of conception between two groups

	AGE OF CONCEPTION		
	MEAN	STANDARD DEVIATION	P VALUE
GROUP S	25.5	3.7619	0.0004
GROUP C	23.41	3.4812	
P value: 0.0004, statistically significant			

Table 2 shows the distribution of study population based on age of conception. The majority of the pregnant women in both groups belong to 20 to 30 years age of conception. In the present study Pregnant women in Group S (women with PCOS) were conceived at advanced age when compared with pregnant women in Group C (without PCOS).

Table 2: Distribution of study population based on age of conception in current pregnancy

AGE OF CONCEPTION DISTRIBUTION						
Age (years)	Group S		Group C		P value	Chi-square test
	No	%	No	%		
20 to 25	47	58.75	64	80	0.0037	8.448
26 to 30	25	31.25	12	15	0.0151	5.904
31 to 35	7	8.75	4	5	0.3501	0.873
36 to 40	1	1.25	0	0	0.3173	1

BMI DISTRIBUTION

Table.3: comparison of BMI between two groups

BMI (kg/mt^2)	Mean	SD	P value	t statistic
Group S	33.9	4.5942		
Group C	28.016	4.0120	<0.0001	-8.628
P value: <0.0001, statistically significant				

Table.3 shows the mean BMI (kg/mt^2) of the two study groups. The mean BMI in Group S was 33.9 ± 4.5942 which is far greater when compared to BMI 28.016 ± 4.0120 in Group C.BMI is calculated by weight [in kgs]/height [in meters].

PREGNANCY OUTCOMES GESTATIONAL HYPERTENSION

Table.4: Prevalence of Gestational hypertension

Gestational Hypertension	Group S		Group C		p value	Chi-square
	No	%	No	%		
	17	21.25	7	8.75	0.0273	4.871
P value: 0.0273, Statistically significant						

Table.4 shows the prevalence of Gestational hypertension in two study groups. 17 pregnant women (21.25%) in Group S were diagnosed as having Gestational hypertension when compared to 7 pregnant women (8.75%) in Group C. In present study gestational hypertension prevalence differed across groups with a P value of 0.0273. In present study we observed increased prevalence of gestational hypertension in women with PCOS.

MODE OF CONCEPTION

Table.5: Mode of conception in two study groups

Mode of Conception	Group S		Group C		p value	Chi- square
	No	%	No	%		
Spontaneous	16	20	75	93.75	<0.0001	88.148
ovulation induction	33	41.25	2	2.5	<0.0001	34.925
laparoscopic drilling	4	5	0	0	0.0435	4.077
Intrauterine insemination	2	2.5	3	3.75	0.6506	0.205
Post PCOS treatment	24	30	0	0	<0.0001	28.059
Invitro fertilization	1	1.25	0	0	0.3173	1

In this current study only 16 women (20%) were spontaneously conceived in Group S when compared to 75 women (93.75%) in Group C. In Group S 33 women (41.25%) were conceived by ovulation induction whereas only 2 women (2.5%) were conceived by ovulation induction in group C. Two women in Group S and three women in Group C were conceived by intrauterine insemination. In Group S 24 women were conceived after receiving treatment and optimization for PCOS. Only one woman in Group S underwent invitro fertilization for conception**.**

PREECLAMPSIA

Table.6: Prevalence of Preeclampsia in two study groups

	Group S		Group C		p value	Chi-square
	No	%	No	%		
Preeclampsia	24	30	11	13.75	0.0132	6.142
P value: 0.0132, Statistically significant						

Preeclampsia is more common in women with PCOS than those without PCOS with a p value of 0. 0132.In Group S 24 women were labelled as having preeclampsia when compared to 11 women in Group C**.**

GESTATIONAL DIABETES MELLITUS

Table.7: Prevalence of Gestational diabetes mellitus in study groups

	Group S		Group C		p value	Chi- square
	No	%	No	%		
Gestational Diabetes Mellitus	18	22.5	6	7.5	0.0081	7.015
P value: 0.0081, Statistically significant						

Gestational diabetes was diagnosed in 18 women (22.5%) in Group S where as in Group C only 6 women (7.5%) were diagnosed as having gestational diabetes mellitus with P value of 0. 0081.Table.7 showed that women with polycystic ovarian syndrome were more likely to develop gestational diabetes.

HYPOTHYROIDISM

Table.8: Hypothyroidism prevalence in study population

	Group S		Group C		p value	Chi-square value
	No	%	No	%		
Hypothyroidism	18	22.5	10	12.5	0.0971	2.753
P value: 0.0971, Statistically not significant						

In this study about 18 women in Group S were having hypothyroidism when compared to 10 women in Group C depicted in table.8 Women with PCOS had a similar frequency of hypothyroidism to those without PCOS (P = 0.0971).

ANEMIA

Anemia was seen in 20 pregnant women in Group S and in 21 women in Group C. Anemia prevalence was similar across research groups with P value of 0.8567.

Table.9: Anemia Prevalence in two study groups

	No	%	p value	Chi-square
Group S	20	25%		
Group C	21	26.25%	0.87	0.033
P value: 0.8567, Statistically not significant				

MODE OF DELIVERY

In the study group we saw a range of delivery methods including vaginal birth, cesarean section, forceps delivery and vacuum assisted delivery.67 women (83.75%) in group S and 39 women (48.75%) in group C underwent delivery by cesarean section. Whereas 12 women (15%) in group S and 40 women (50%) in group C were delivered by normal vaginal delivery. We observed statistically significant difference in rate of caesarean section deliveries and normal vaginal deliveries between two study groups. One woman (1.25%) from Group S underwent vacuum assisted delivery. One woman (1.25%) from Group C underwent forceps assisted delivery. The frequencies of vacuum-aided and forceps births were similar across groups (P = 0.3173). Table.10 shows study population distribution based on mode of delivery in the two groups.

Table.10: Study population distribution based on mode of delivery

Mode of delivery	Group S		Group C		p value	Chi- square
	No	%	No	%		
Caesarean section	67	83.75	39	48.75	<0.0001	21.778
Normal vaginal delivery	12	15	40	50	<0.0001	22.197
Forceps delivery	0	0	1	1.25	0.3173	1
Vacuum delivery	1	1.25	0	0	0.3173	1

TWIN PREGNANCY

Table.11: Prevalence of Twin pregnancies in two study groups

	Group S		Group C		p value	Chi-square
	No	%	No	%		
Twin pregnancies	25	31.25	2	2.5	<0.0001	23.423
P value: <0.0001, Statistically significant						

In this study 25 twin pregnancies (31.25%) were noted in group
S. In group C, only 2 pregnancies were twin pregnancies. A chi-square test determined significance. Two groups had substantially different twin pregnancy rates (P < 0.0001).
The present research found increased twin pregnancies in Group S (PCOS women).

DISCUSSION

The WHO estimates that 116 million women (3.4%) worldwide have PCOS[2]. There have been several research on polycystic ovarian syndrome and pregnant women and their babies. Even though it is one of the most prevalent issues related to women's reproductive health the medical community still faces many obstacles in providing an effective therapy for it. The data on the prevalence of PCOS and its pregnancy outcomes in India are scarce, which is why we choose to conduct the present study[3].

DEMOGRAPHIC DATA

Age of conception:

In their population-based cohort research, Nathalie Roos et al.,[4] found that polycystic ovary syndrome women were more likely to conceive after 35. A notable disparity was discovered in their study (p < 0.001). In another study conducted by Lipipuspa Pattnaik et al.,[5] in 102 pregnant women, 43.1% of women with PCOS gave birth at advanced maternal age (30 to 45 years) when compared to 19.6% in women without PCOS (P value:<0.009).
Anuradha Subramanian et al.,[6] performed a retrospective cohort study in 2022. Women without PCOS had a mean delivery age of 30.85 years whereas those with PCOS had 30.86. No statistically significant variance was seen in average delivery age. The research found that the mean ± SD age of

conception was 25.5 ± 3.7619 years for women with PCOS and 23.41 ± 3.4812 years for women without PCOS. 0.0004 p-value showed a significant difference
between groups. Our findings match those of Nathalie Roos et al.,[4] and Lipipuspa pattnaik[5].

BMI (Body Mass Index):
When comparing PCOS and non-PCOS women, Nathalie Roos et al.,[4] discovered that 60.6% of PCOS women had a body mass index (BMI) >25.0, whereas only 34.8% of non-PCOS women did. Women with PCOS had double the prevalence of BMI >25.0 compared to those without PCOS, indicating a significant difference (P value: <0.001). According to Lipipuspa Pattnaik et al.,[5] 62.75% of women with PCOS had a BMI > 25kg/mt2, that was significantly different from 23.5% of those without PCOS (P value <0.001). The research by Anuradha Subramanian et al.,[6] found a significant difference in BMI between women with and without PCOS (26.54± 6.38 vs. 25.11 ± 5.43). In current research, Group S had a significantly higher BMI (33.9 ± 4.5942) than Group C (28.016 ± 4.0120). This research found a substantial difference in BMI between two groups (P value <0.0001) consistent with studies by Nathalie Roos et al[4]., Lipipuspa Pattnaik et al[5]., and Anuradha Subramanian et al[6]. Using the current study's findings, in comparison to women without PCOS, PCOS women have higher BMI values and they are more obese.

PREGNANCY OUTCOMES
Gestational hypertension:
Lipipuspa Pattnaik et al.,[5] studied 102 normal pregnant women in 2022 without polycystic ovarian syndrome, 21.6% of women had gestational hypertension.In Boomsma et al.,[7] (2006) meta-analysis 15 trials were considered with 720 women diagnosed with PCOS. Their odds ratio for pregnancy-induced hypertension in polycystic ovary syndrome women was 3.67 to 3.71. Retrospective cohort research by Anuradhaa Subramanian et al.,[6] in 2022 found that women with polycystic ovarian syndrome (PCOS) had a higher rate of hypertension (1.77%) than those without PCOS (1.11%). Yu et al.,[8] did a meta-analysis and systematic review in 2016 and found that PCOS during pregnancy was strongly linked to gestational hypertension with a Relative Risk Ratio of 2.46 and a P value of less than 0.001.In 2014 M. Kollmann et al.,[9] did a retrospective cohort study and found that pregnancy induced hypertension was 8.25 times greater in women with polycystic ovarian syndrome (PCOS). Gestational hypertension was significantly higher in women with PCOS (11.1%) than those without PCOS (1.3%) with a P value of less than 0.00121. 25% of PCOS pregnant women had gestational hypertension compared to 8.75% of women without PCOS, with a relative risk ratio of 2.42 and odds ratio of 2.814, which is statistically significant with a P value of 0.0273. Research shows that gestational hypertension is more common in PCOS pregnant women. Findings from the present study are in agreement with those of C.M.Boomsma et al.,[7] Anuradhaa Subramanian et al.,[6] Hai-Feng Yu et al.,[8] and M.Kollmann et al.,[9].Lipipuspa Pattnaik et al[5].'s research findings differ from ours.

Pre-eclampsia:
The odds ratio of pre-eclampsia was 1.45 and the P value was less than 0.01 in research comparing 5.84% of women with PCOS to 2.95% without PCOS (Roos et al.,[4]). A 2006 meta-analysis by C.M. Boomsma et al.,[7] indicated that PCOS raises pre-eclampsia risk by 3.47. Yu et al.,[8] did a meta-analysis and systematic review in 2016 and found PCOS during pregnancy is linked to a higher risk of pre-eclampsia (relative risk ratio: 2.79, P value: <0.001). In a retrospective cohort study by M.kollmann et al.,[9] 3.5% of PCOS women and 1.6% of non-PCOS women developed pre-eclampsia. They observed no change in preeclampsia incidence with a P value of 0.221. Statistically significant difference in pre-eclampsia incidence across research groups (P = 0.0132) was noted. The present study findings match those of Nathalie Roos et al.,[4] C.M.Boomsma et al.,[7] and Hai-Feng Yu et al.,[8]Current research findings differ from M.kollmann et al.,[9] study owing to asymmetrical sample size with big sample size of women without PCOS.

Gestational diabetes mellitus:

Our most recent research found gestational diabetes mellitus in 22.5% of PCOS women and 7.5% of non-PCOS women (P = 0.0081). We found a 3.58 relative risk ratio for gestational diabetes mellitus in women with or without polycystic ovary syndrome. Nathalie Roos et al.,[4] in their study observed that Gestational diabetes was present in 3.30 percent in women with polycystic ovarian syndrome (PCOS) and 0.9 percent in those without PCOS with a p-value of less than 0. 001.At a Bhubaneswar tertiary care hospital Lipipuspa Pattnaik et al.,[5] (2022) observed that 17.6% of PCOS patients developed gestational diabetes compared to 9.8% in non-PCOS patients. No substantial change in gestational diabetes incidence was identified in their study. Boomsma et al.,[7] showed a 2.94% incidence of gestational diabetes mellitus in pregnant women and 3.66% incidence in women with polycystic ovarian syndrome. Yu et al.,[8] in 2016 did a systematic review and meta-analysis, the study found a 2.78 relative risk ratio (P value: <0.001) linking PCOS in pregnancy to gestational diabetes mellitus. The meta-analysis by Yan et al.,[33] in 2022 found incidence of GDM in women with PCOS is 20.64% (P value:<0.001). This investigation confirmed the findings of Nathalie Roos et al.,[4] C.M.Boomsma et al.,[7] Hai-Feng Yu et al.,[8] and Qingzi Yan et al., Lipipuspa Pattnaik et al.,[5] short sample size may explain the discrepancy between present research and others.

Hypothyroidism:

Anuradhaa Subramanian et al.,[6] discovered that 4.01% of women with polycystic ovarian syndrome (PCOS) and 2.18% of women without PCOS had hypothyroidism, a significant result with P value of <0.0001.The present research found hypothyroidism in 22.5% PCOS women and 12.5% non-PCOS women, with no statistical significance (P=0.0971). Our research found an odds ratio of 2.03 and a relative risk ratio of 1.8 for hypothyroidism. Asymmetrical and huge sample size in Anuradhaa Subramanian et al.,[6] research caused discrepancies with the present study conclusions.

Anemia:

There was no significant difference in anemia prevalence between PCOS-positive and PCOS-negative women (P=0.8567). About 25% of anemic women had polycystic ovarian syndrome (PCOS) whereas 26.25 % did not. The odds and relative risk ratios were 0.93 and 0.952.

Mode of conception:

Nathalie Roos et al.,[4] studied Assisted reproductive technology use, differed significantly between PCOS and non-PCOS groups with 13.60% of PCOS women and 1.51% of non-PCOS women utilizing it for conception. A group of 102 pregnant women were researched by Lipipuspa Pattnaik et al.,[5] (2022) in Bhubaneswar, India in which assisted reproductive technology was utilized by 86.3% of PCOS women for conception, but none of the women without PCOS used it (P value <0.001). 20% of PCOS women conceived spontaneously compared to 93.75% of Group C. At least 50% of Group S and 6.25% of Group C women conceived using assisted reproductive technologies (P < 0.001). In Group S 41.25% underwent ovulation induction, 5% laparoscopic drilling, 2.5% IUI and 1.25% IVF. Recent results mirrored Nathalie Roos et al.,[4] and Lipipuspa Pattnaik.,[5].

Mode of delivery:

Nathalie Roos et al.,[4] found an odds ratio of 1.69 and a p-value of 0.001 for elective or emergency Cesarean sections. Women without polycystic ovarian syndrome had a rate of 14.68%, whereas those with PCOS had 22.44%. According to research by Lipipuspa Pattnaik et al.,[5] in 2022, 64.7% of PCOS-positive women and 39.2% of PCOS-negative women had cesarean sections. Women with polycystic ovarian syndrome had more cesarean sections. Anuradhaa Subramanian et al.,[6] from their study, showed that 27.85% women with PCOS underwent cesarean section delivery (12.59%: emergency / 15.26%: elective, unspecified) when compared to 24.79% women without PCOS (10.94%: emergency / 13.85%: elective, unspecified). They concluded that delivery in PCOS women had 7% higher odds of being elective LSCS and 10% higher odds of being emergency LSCS. C.M.Boomsma et al.,[7] found that women with polycystic ovarian syndrome (PCOS) had higher Caesarean sections.

Instrumental delivery rates were 1.37 times higher for PCOS women than for PCOS-free women. Yu et al.,[8] found that women with PCOS had a greater incidence of cesarean section delivery compared to those without PCOS, with a 1.25 relative risk ratio and a significant P value of <0.001.M. Kollmann et al.,[9] reported that 53% of women with PCOS underwent cesarean sections, compared to 39.9% of women without PCOS, a P value of 0.003.Statistically significant (P value: <0.0001), with an odds ratio of 5.41 and relative risk ratio of 1.717. 83.75% of PCOS women and 48.75% of PCOS-free women underwent cesarean section delivery in the present study. In Group S, 15% and 50% of Group C had normal vaginal deliveries (P < 0.0001). No significant difference in instrumental delivery rate was seen across research groups (P = 1). The present study's findings matched those of Nathalie Roos et al.,[4] Lipipuspa Pattnaik et al.,[5] Anuradhaa Subramanian et al.,[6] C.M.Boomsma et al.,[7] Hai-Feng Yu et al.,[8] and M.Kollmann et al.,[9].

Twin pregnancies:
In this study, 31.25% of women with PCOS and 2.5% without PCOS had twin pregnancies, a significant difference (P < 0.0001). Twin pregnancy rates are greater in PCOS women because they conceive via ovulation induction.

LIMITATIONS OF THE STUDY:
1. DIAGNOSTIC CRITERIA-

The criteria for diagnosing PCOS vary leading to inconsistencies in the study population.
2. FOLLOW UP DURATION-

Limited follow up periods can prevent the observation of long-term outcomes for both mother and child.

CONFLICT OF INTEREST: There are no conflicts of interest.

FUNDING RESOURCES: There are no funding resources.

CONCLUSION
- Based on the findings in the current study we conclude that women with PCOS are at higher risk of developing adverse pregnancy outcomes such as Gestational hypertension, preeclampsia and Gestational diabetes mellitus. These women are made aware of the potential risks associated with pregnancy and advised to receive continuous comprehensive monitoring, screening of the complications throughout pregnancy and delivery and of more antenatal checkups.
- Women with PCOS are at increased need of assisted reproductive techniques for their conception and there is increased risk of operative delivery.
- Proper counselling and adequate support should be offered to all pregnant women with PCOD to institute life style modifications aiming for a target of healthy weight gain during pregnancy, good glycemic control, healthy dietary habits, antenatal exercises and regular antenatal checkups for fruitful pregnancy outcome.

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