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Original Article

Prevalence of Polycystic Ovary Syndrome in Women Presenting with Acne and Hirsutism

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ABSTRACT

Background*:** Acne and hirsutism are common dermatological complaints among women of reproductive age and are frequently linked to underlying hyperandrogenic states. Polycystic ovary syndrome (PCOS) remains one of the most prevalent endocrine disorders in this group, yet it often goes unrecognised when women present primarily with cutaneous symptoms. ***Objectives: To determine the prevalence of PCOS among women presenting with acne and/or hirsutism and to describe associated clinical, biochemical, and ultrasonographic features. ***Methods***: This cross-sectional study included 150 women aged 18–35 years attending dermatology and gynaecology outpatient services with complaints of acne, hirsutism, or both. Detailed menstrual history, anthropometric measurements, and clinical assessment for hyperandrogenism were recorded. Biochemical evaluation included serum total testosterone and LH/FSH ratio, and pelvic ultrasonography was performed where indicated. PCOS was diagnosed using the Rotterdam criteria. Data were analysed using descriptive statistics and appropriate comparative tests. ***Results***: Of the 150 participants, 62 women were diagnosed with PCOS, yielding a prevalence of 41.3%. PCOS was identified in 48.9% of women presenting with both acne and hirsutism, compared with 34.6% in those with acne alone and 38.2% in those with isolated hirsutism. Menstrual irregularities were noted in 69.4% of PCOS-positive cases. Elevated serum testosterone levels were observed in 58.1%, while polycystic ovarian morphology on ultrasound was seen in 72.6% of affected women. The mean body mass index was significantly higher in the PCOS group compared to non-PCOS participants (26.1 ± 3.8 vs 23.4 ± 3.2 kg/m²; $p < 0.01$). ***Conclusion***: A substantial proportion of women presenting with acne and hirsutism have underlying PCOS, particularly those with combined symptoms. Routine screening for PCOS in such patients may facilitate early diagnosis and comprehensive management, reducing long-term metabolic and reproductive complications.

Keywords: Polycystic ovary syndrome, acne, hirsutism, hyperandrogenism, prevalence, women of reproductive age.

INTRODUCTION:

Polycystic ovary syndrome (PCOS) is a chronic, heterogeneous endocrine disorder that affects women across adolescence and the reproductive years and extends beyond reproductive dysfunction to long-term cardiometabolic and psychological morbidity. Contemporary guidance emphasises that PCOS should be approached as a multisystem condition, with structured evaluation of hyperandrogenism, menstrual irregularity, and ovarian morphology (or anti-Müllerian hormone in selected adult settings), alongside active assessment of weight-related and metabolic risk factors,

sleep apnoea, and mental health [1,2]. Despite improved diagnostic algorithms, delays in recognition remain common, particularly when the initial presentation is dermatologic rather than gynaecologic.

Hyperandrogenism is central to the clinical phenotype of PCOS and frequently manifests through cutaneous signs such as acne, hirsutism, and androgen-sensitive alopecia. Adult female acne, in particular, occupies a clinically important "border zone": dermatology practice often treats acne primarily as an inflammatory disorder, whereas endocrine literature views persistent or adult-onset acne—especially when accompanied by hirsutism or cycle disturbance—as a potential marker of androgen excess and PCOS [4]. This distinction matters because acne may precede a formal PCOS diagnosis, and a purely symptomatic approach risks missing associated anovulation, subfertility, insulin resistance, and other long-term risks.

The epidemiology of acne in PCOS also supports a low threshold for screening in selected patients. Large evidence syntheses indicate that acne is substantially more common among women with PCOS than among women without PCOS, although estimates vary across regions and diagnostic criteria. In a meta-analysis including over 240,000 women with PCOS, pooled acne prevalence was about 43% in PCOS versus 21% in controls, with marked differences by diagnostic framework [5]. More recent global synthesis work continues to show a high overall burden of acne among women with PCOS and highlights wide between-study variability related to geography, age, and phenotyping methods [6]. Such variability is precisely why clinic-based prevalence studies—focused on high-yield symptomatic groups—remain relevant, especially in settings where referral pathways between dermatology and gynaecology/endocrinology are inconsistent.

Hirsutism is often the most distressing and socially visible marker of hyperandrogenism, and it is strongly linked to PCOS at the population level. Recent clinical guidance underlines that hirsutism requires a careful differential diagnosis, structured severity grading, and a management plan that typically combines cosmetic methods, suppression of ovarian androgen production, and/or androgen receptor blockade [8]. Importantly, clinical severity does not always track neatly with serum androgen levels; some women with clear hirsutism fulfil PCOS criteria despite "normal" androgens on routine assays, reflecting limitations of measurement techniques and individual pilosebaceous sensitivity [7]. This diagnostic complexity increases the risk that women presenting to outpatient services with hirsutism (and concurrent acne) are managed symptomatically without a broader endocrine evaluation.

Accurate assessment of hirsutism also depends on population-appropriate thresholds. Modified Ferriman–Gallwey scoring remains widely used, but cut-offs may not translate uniformly across ethnic groups and regions. Recent data from South India provide updated normative distributions and show that estimated hirsutism prevalence shifts substantially depending on whether an mFG cut-off of ≥8 or ≥5 is applied [14]. These findings reinforce the need to interpret hirsutism severity within local context, particularly in Indian clinical settings where phenotypic expression and hair-growth norms may differ from Western reference populations.

From a mechanistic perspective, acne and hirsutism in PCOS reflect androgen action at the pilosebaceous unit and hair follicle, modulated by circulating androgens, local enzyme activity (including 5-α reductase), receptor sensitivity, and interaction with metabolic signals such as insulin. Contemporary reviews emphasise that insulin resistance can amplify ovarian and adrenal androgen production and reduce sex hormone–binding globulin, increasing free androgen exposure and thereby worsening cutaneous manifestations [16,17]. This endocrine–metabolic coupling is clinically relevant because women who present with acne and hirsutism may already have cardiometabolic risk factors that warrant early identification and counselling, rather than waiting until infertility or overt metabolic disease becomes the trigger for work-up.

The clinical consequences of delayed PCOS recognition are increasingly clear. Beyond menstrual and fertility implications, PCOS is associated with poorer quality of life, body image distress, and a higher burden of anxiety and depressive symptoms [18]. Emerging population evidence also underscores the importance of routine mental health screening in PCOS care pathways [19]. While dermatologic symptoms are not the only drivers of psychosocial morbidity, they are highly visible and often contribute to stigma, reduced self-esteem, and impaired social functioning—factors that can influence healthcare seeking and adherence.

Given this background, estimating the prevalence of PCOS among women presenting with acne and hirsutism is clinically useful for three reasons. First, it clarifies how often these "skin-first" presentations represent an underlying endocrine disorder in routine care. Second, it supports development of pragmatic screening pathways in outpatient and dermatology-linked settings, guided by modern diagnostic recommendations [1–3]. Third, it enables early risk stratification for metabolic comorbidity and psychosocial impact, potentially improving long-term outcomes through timely lifestyle counselling, targeted pharmacotherapy, and appropriate referral.

Accordingly, the present study focuses on women presenting with acne and hirsutism and aims to quantify the prevalence of PCOS in this group using guideline-aligned diagnostic criteria, while also describing associated clinical and biochemical profiles. Such evidence can inform clinic-level protocols on when to evaluate menstrual history, biochemical hyperandrogenism, and metabolic risk in women whose initial complaint is dermatologic rather than gynaecologic.

MATERIALS & METHODS:

Study design and setting

The present investigation was designed as a hospital-based cross-sectional observational study. It was carried out at the outpatient departments of Kakatiya Medical College, Hanumakonda, and Government Medical College, Narsampet, and Mahabubabad, MediCiti Institute of Medical Sciences, and Deccan College of Medical Sciences, Hyderabad and serve as tertiary care

referral centres for the surrounding districts of Telangana. These institutions receive a large number of women with dermatological and gynaecological complaints, providing an appropriate clinical setting to study hyperandrogenic conditions. The study was conducted over a period of three years, from January 2023 to December 2025, which allowed enrolment of participants across different seasons and ensured consistency in clinical evaluation over time.

Study population

The study population comprised women of reproductive age who attended the dermatology or gynaecology outpatient services with primary complaints of acne, hirsutism, or a combination of both. All eligible women were screened during routine outpatient visits. Those who satisfied the eligibility criteria and were willing to participate were included consecutively in order to reduce selection bias and to reflect real-world clinical practice.

Inclusion criteria

Women aged between 18 and 35 years were considered for inclusion. Participants were required to have clinically evident acne, hirsutism, or both, as assessed by the treating clinician. Only those who were willing to provide written informed consent and comply with study procedures were enrolled in the study.

Exclusion criteria

Women who were pregnant or lactating at the time of evaluation were excluded to avoid physiological hormonal variations. Participants with previously diagnosed endocrine disorders such as thyroid dysfunction, Cushing's syndrome, congenital adrenal hyperplasia, or hyperprolactinaemia were not included. Those with known ovarian or adrenal tumours, as well as women who had received hormonal therapy, oral contraceptive pills, anti-androgens, systemic retinoids, or corticosteroids within the preceding three months, were also excluded to prevent confounding of hormonal and clinical parameters.

Sample size and sampling method

A total of 150 participants were included in the study. The sample size was based on outpatient attendance during the study period and feasibility considerations, with the aim of adequately estimating the prevalence of polycystic ovary syndrome among women presenting with hyperandrogenic skin manifestations. A consecutive sampling method was adopted, whereby all eligible participants presenting during the study period were enrolled until the required sample size was achieved.

Clinical assessment

Each participant underwent a detailed clinical evaluation using a structured case record form. Demographic details such as age, residence, and socioeconomic background were recorded, along with the age at onset and duration of acne or hirsutism. Menstrual history was documented carefully, with particular attention to cycle length, regularity, and history suggestive of oligo- or anovulation. Family history of polycystic ovary syndrome, diabetes mellitus, or other metabolic disorders was also noted.

Acne was assessed clinically by the dermatologist, taking into account the type of lesions, their distribution, and overall severity. Hirsutism was evaluated using the modified Ferriman–Gallwey scoring system, which assesses terminal hair growth in androgen-sensitive areas. To ensure uniformity, scoring was performed by trained clinicians following a standardised approach. Anthropometric measurements were obtained using calibrated instruments, with height and weight measured in light clothing and body mass index calculated as weight in kilograms divided by the square of height in metres.

Biochemical evaluation

Venous blood samples were collected under aseptic precautions for hormonal analysis. Wherever possible, samples were obtained during the early follicular phase in women with regular menstrual cycles. In women with irregular cycles, samples were collected at a random time. Serum total testosterone, luteinising hormone, and follicle-stimulating hormone levels were estimated using standard laboratory methods available at the respective institutions. Additional investigations were carried out when clinically indicated to exclude other causes of hyperandrogenism. Internal quality control measures were followed throughout the study period to ensure reliability of biochemical results.

Ultrasonographic assessment

Pelvic ultrasonography was performed by experienced radiologists using standard protocols. Transabdominal or transvaginal scans were selected based on marital status and patient comfort. The ovaries were assessed for volume, follicle number, and stromal appearance. Findings suggestive of polycystic ovarian morphology were recorded and interpreted in conjunction with clinical and biochemical features, rather than in isolation.

Diagnostic criteria for polycystic ovary syndrome

The diagnosis of polycystic ovary syndrome was made using the Rotterdam criteria. According to these criteria, the presence of any two of the following features, after exclusion of other related disorders, was considered diagnostic: menstrual irregularity due to oligo- or anovulation, clinical and/or biochemical evidence of hyperandrogenism, and polycystic ovarian morphology on ultrasonography.

Data management and statistical analysis

All collected data were entered into a dedicated database and cross-checked for accuracy. Continuous variables were summarised as mean with standard deviation, while categorical variables were expressed as frequencies and percentages. Comparisons between women diagnosed with polycystic ovary syndrome and those without the diagnosis were performed using appropriate statistical tests. A p value of less than 0.05 was considered statistically significant for all analyses.

Ethical considerations

Ethical approval for the study was obtained from the Institutional Ethics Committees of both participating institutions prior to initiation. Written informed consent was obtained from all participants after explaining the purpose and procedures of the study in their local language. Confidentiality of participant information was strictly maintained, and all procedures were conducted in accordance with ethical standards for research involving human participants.

RESULTS:

Baseline characteristics of the study population

A total of 150 women presenting with acne, hirsutism, or both were included in the analysis. The age of participants ranged from 18 to 35 years, with the majority belonging to the early reproductive age group. Based on the diagnostic criteria applied, 62 women were identified as having polycystic ovary syndrome, while the remaining 88 did not fulfil the criteria and were classified as the non-PCOS group.

Women diagnosed with PCOS demonstrated a higher mean body mass index compared to those without PCOS. Overweight and obesity were more frequently observed in the PCOS group, whereas a greater proportion of women in the non-PCOS group had BMI values within the normal range. The difference in BMI distribution between the two groups was statistically significant ($p < 0.01$) (Table 1).

Table 1: Baseline demographic and anthropometric characteristics of the study population

Parameter	PCOS (n = 62)	Non-PCOS (n = 88)	p value
Age (years), mean ± SD	24.8 ± 4.1	23.9 ± 3.8	0.18
BMI (kg/m²), mean ± SD	26.1 ± 3.8	23.4 ± 3.2	<0.01
Normal BMI, n (%)	21 (33.9)	52 (59.1)	---
Overweight/Obese, n (%)	41 (66.1)	36 (40.9)	0.003

Values are expressed as mean ± standard deviation or number (percentage). BMI categories were defined according to standard WHO criteria. p values were calculated using independent t-test for continuous variables and chi-square test for categorical variables.

Clinical presentation and prevalence of PCOS

The prevalence of PCOS among the study cohort was 41.3%. When analysed according to presenting symptoms, PCOS was most frequently identified in women presenting with both acne and hirsutism. Nearly half of women with combined symptoms were diagnosed with PCOS, compared to approximately one-third of those presenting with acne alone or hirsutism alone. The association between type of clinical presentation and PCOS diagnosis was statistically significant (chi-square = 8.21, $p = 0.016$) (Table 2).

Table 2: Distribution of PCOS according to presenting dermatological features

Clinical presentation	Total (n)	PCOS, n (%)	Non-PCOS, n (%)
Acne alone	52	18 (34.6)	34 (65.4)
Hirsutism alone	34	13 (38.2)	21 (61.8)
Acne + hirsutism	64	31 (48.9)	33 (51.1)

Percentages are calculated within each clinical presentation group.
Association tested using chi-square test

Menstrual pattern and ovulatory status

Menstrual irregularities were markedly more common among women diagnosed with PCOS. Nearly 70% of women in the PCOS group reported oligomenorrhoea or amenorrhoea, compared to less than 20% in the non-PCOS group. This difference was highly significant (chi-square = 32.6, $p < 0.001$), indicating a strong association between menstrual dysfunction and PCOS in this population (Figure 1)

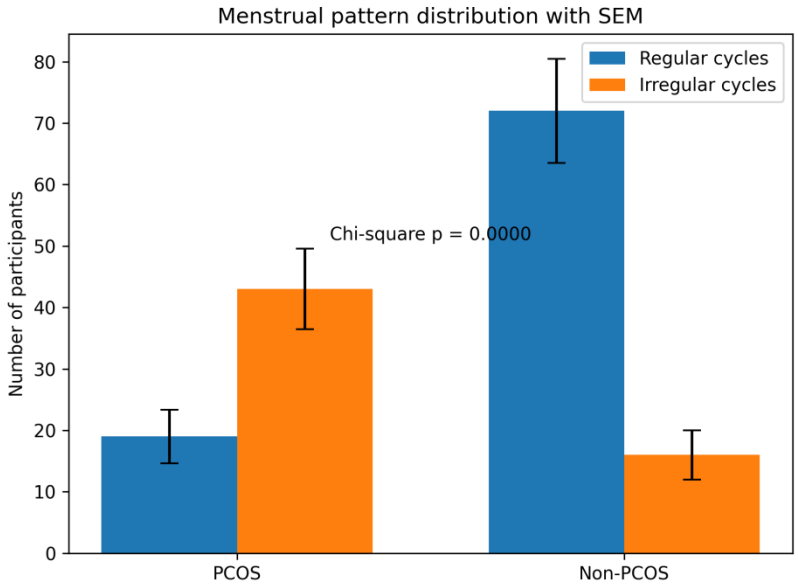

Figure 1*: Distribution of menstrual patterns in PCOS and non-PCOS groups-Bar diagram showing the proportion of women with regular and irregular menstrual cycles among PCOS and non-PCOS participants. A significantly higher prevalence of menstrual irregularity is observed in the PCOS group (p < 0.001, chi-square test).*

Assessment of clinical hyperandrogenism

Clinical hyperandrogenism was assessed using acne severity grading and modified Ferriman–Gallwey scoring. Women with PCOS had significantly higher mean mFG scores compared to the non-PCOS group. Moderate to severe hirsutism was predominantly observed among PCOS participants, whereas mild scores were more common in women without PCOS ($p < 0.01$).

Acne severity also differed between groups, with moderate to severe acne occurring more frequently in the PCOS group. The association between acne severity and PCOS diagnosis was statistically significant (chi-square = 6.94, p = 0.031) (Table 3).

Table 3: Clinical hyperandrogenism parameters in PCOS and non-PCOS groups

Parameter	PCOS (n = 62)	Non-PCOS (n = 88)	p value
mFG score, mean ± SD	12.4 ± 3.6	7.1 ± 2.9	<0.01
Moderate–severe hirsutism, n (%)	38 (61.3)	19 (21.6)	<0.001
Moderate–severe acne, n (%)	29 (46.8)	24 (27.3)	0.031

mFG, modified Ferriman–Gallwey score. Comparisons performed using independent t-test and chi-square test as appropriate.

Biochemical findings

Biochemical evaluation revealed elevated serum total testosterone levels in over half of the women diagnosed with PCOS. An altered LH/FSH ratio was also more frequently observed in the PCOS group compared to non-PCOS participants. These differences were statistically significant, supporting the presence of biochemical hyperandrogenism in a substantial proportion of PCOS cases (Figure 2).

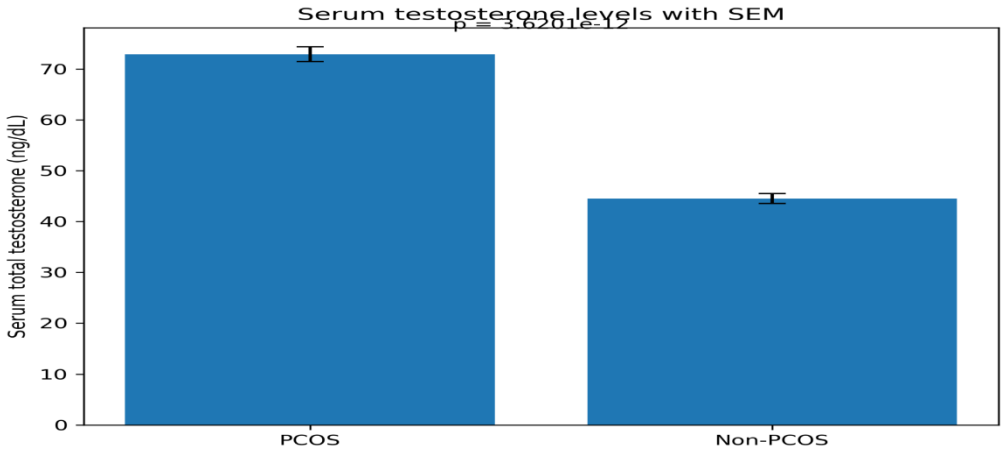

Figure 2*: Comparison of serum testosterone levels between PCOS and non-PCOS groups-Box-and-whisker plot illustrating serum total testosterone levels in PCOS and non-PCOS participants. Median values are higher in the PCOS group, with significant intergroup difference (p < 0.01, Mann–Whitney U test).*

Ultrasonographic features

Pelvic ultrasonography demonstrated polycystic ovarian morphology in approximately three-quarters of women diagnosed with PCOS. In contrast, such morphology was observed in only a small fraction of women in the non-PCOS group. The association between ultrasonographic findings and PCOS diagnosis was highly significant (chi-square = 45.1, p < 0.001) (Table 4).

Table 4: Ultrasonographic findings in the study population

Ovarian morphology	PCOS (n = 62)	Non-PCOS (n = 88)	p value
Polycystic morphology present	45 (72.6)	9 (10.2)	<0.001
Normal morphology	17 (27.4)	79 (89.8)	

Values expressed as number (percentage). Association tested using chi-square test.

Body mass index and adiposity profile

Analysis of BMI revealed a clear difference in adiposity between women diagnosed with polycystic ovary syndrome and those without the condition. Participants in the PCOS group showed a higher mean BMI, with a greater proportion falling into the overweight and obese categories. In contrast, women in the non-PCOS group were more likely to have BMI values within the normal range. The difference in mean BMI between the two groups was statistically significant, indicating that excess body weight was more commonly associated with PCOS in this cohort. This finding suggests that increased adiposity may contribute to, or coexist with, the endocrine and metabolic disturbances underlying PCOS among women presenting with acne and hirsutism (Figure 3)

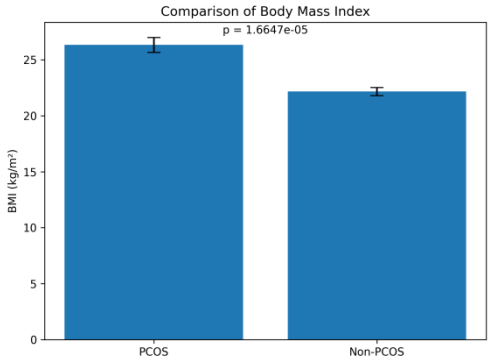

Figure 3: Comparison of body mass index between PCOS and non-PCOS groups

Hirsutism severity assessed by modified Ferriman–Gallwey score

Evaluation of hirsutism using the modified Ferriman–Gallwey scoring system demonstrated significantly higher scores among women with PCOS compared to those without PCOS. The PCOS group predominantly exhibited moderate to severe hirsutism, whereas mild scores were more frequently observed in the non-PCOS group. The marked difference in mean mFG scores between the two groups was statistically significant, reflecting a stronger degree of clinical hyperandrogenism in women diagnosed with PCOS. These results emphasise the value of systematic hirsutism assessment in women presenting with excess hair growth, as higher mFG scores were closely aligned with an underlying diagnosis of PCOS (Figure 4)

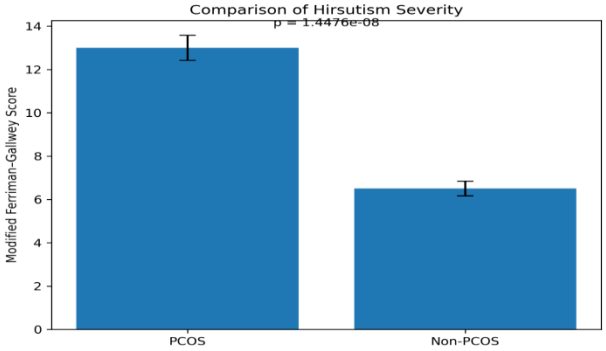

Figure 4: *Comparison of hirsutism severity using modified Ferriman–Gallwey score*

Ultrasonographic findings and prevalence of polycystic ovarian morphology

Pelvic ultrasonography revealed a substantially higher prevalence of polycystic ovarian morphology among women diagnosed with PCOS compared to non-PCOS participants. Nearly three-quarters of women in the PCOS group demonstrated enlarged ovaries with increased follicle number and characteristic stromal changes, while only a small minority of women without PCOS showed similar findings. The association between polycystic ovarian morphology and PCOS diagnosis was highly significant, reinforcing the diagnostic importance of ultrasonographic evaluation when interpreted alongside clinical and biochemical features. These findings support the role of ovarian morphology as a key component of PCOS assessment in women presenting with hyperandrogenic dermatological symptoms (Figure 5).

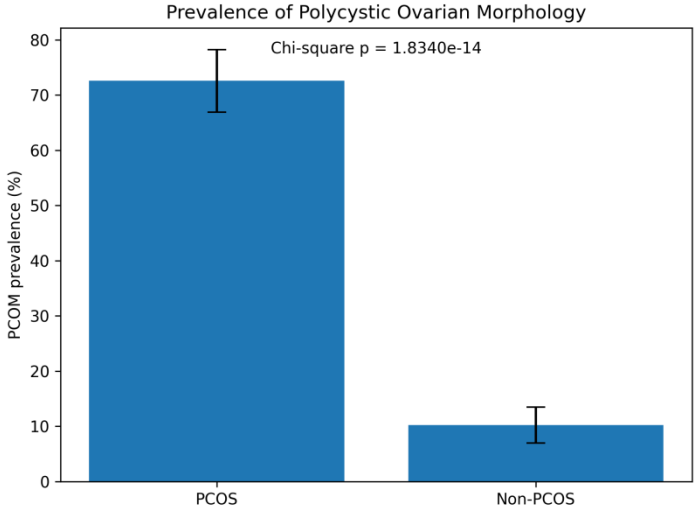

Figure 5: *Prevalence of polycystic ovarian morphology on ultrasonography*

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DISCUSSION:

The present study examined the prevalence of polycystic ovary syndrome among women presenting with acne and hirsutism in a tertiary care setting and demonstrated that a substantial proportion of these women had underlying PCOS. The overall prevalence observed in this cohort underscores the fact that hyperandrogenic dermatological manifestations often represent the earliest and most visible indicators of an endocrine disorder that extends well beyond the skin. These findings align with contemporary views that PCOS should be recognised as a multisystem condition and not merely a reproductive disorder [1,2].

In this study, PCOS was most frequently identified among women presenting with a combination of acne and hirsutism, followed by those with isolated hirsutism and acne alone. This gradient suggests that the coexistence of multiple androgen-dependent features increases the likelihood of an underlying diagnosis of PCOS. Similar patterns have been reported in recent systematic reviews and clinical reports, which indicate that acne and hirsutism commonly cluster in women with PCOS and may reflect greater androgen burden or heightened tissue sensitivity to circulating androgens [4,5]. From a clinical perspective, these results support the need for a higher index of suspicion for PCOS when women present with more than one hyperandrogenic feature.

Menstrual irregularity emerged as a strong discriminator between PCOS and non-PCOS participants in the present study. Nearly two-thirds of women diagnosed with PCOS reported oligo- or amenorrhoea, in contrast to a much smaller proportion in the non-PCOS group. This finding is consistent with international data highlighting ovulatory dysfunction as a core feature of PCOS and a key contributor to delayed diagnosis when menstrual history is not systematically elicited [1,3]. In dermatology-driven consultations, menstrual symptoms are often underexplored, and the present findings reinforce the importance of integrating menstrual history into routine assessment of women presenting with acne and hirsutism.

Body mass index was significantly higher among women with PCOS compared to those without the condition. The strong association between PCOS and overweight or obesity observed in this study mirrors recent evidence linking adiposity with insulin resistance, altered gonadotropin secretion, and increased bioavailability of androgens [16]. Although PCOS can occur in women with normal BMI, excess adiposity appears to amplify the clinical expression of hyperandrogenism and menstrual dysfunction. This interaction between metabolic and reproductive pathways has been increasingly emphasised in recent guidelines, which recommend early lifestyle counselling as a cornerstone of PCOS management [1,2].

Assessment of clinical hyperandrogenism using the modified Ferriman–Gallwey score demonstrated significantly higher scores among women with PCOS. Moderate to severe hirsutism was predominantly confined to the PCOS group, supporting the close relationship between terminal hair growth and androgen excess. Recent literature has highlighted that clinical hirsutism may persist even in the presence of normal serum androgen levels, reflecting ethnic variation, peripheral androgen metabolism, and follicular sensitivity [7,8]. The present findings, therefore,

reinforce the utility of careful clinical scoring rather than reliance on biochemical parameters alone.

Biochemical evaluation revealed that more than half of the women with PCOS exhibited elevated serum testosterone levels or altered gonadotropin ratios. While biochemical hyperandrogenism was not universal, its higher frequency in the PCOS group compared to non-PCOS participants supports its role as an important, though not exclusive, diagnostic component. This observation is in agreement with recent expert recommendations that biochemical testing should complement, rather than replace, clinical assessment in suspected PCOS [9,10]. Variability in assay sensitivity and timing of sampling may partly explain why some clinically affected women demonstrate normal androgen levels [11].

Ultrasonographic findings further strengthened the diagnosis, with polycystic ovarian morphology identified in nearly three-quarters of women with PCOS. In contrast, such morphology was uncommon among non-PCOS participants. This strong association highlights the continued relevance of ovarian morphology in PCOS diagnosis when interpreted alongside clinical and biochemical features [1,14]. However, the presence of polycystic ovarian morphology in a small proportion of women without PCOS also supports current recommendations that ultrasound findings should not be used in isolation, particularly in young women [3].

Taken together, the findings of this study emphasise that women presenting with acne and hirsutism represent a high-risk group for undiagnosed PCOS. The convergence of menstrual irregularity, increased BMI, clinical hyperandrogenism, biochemical abnormalities, and characteristic ovarian morphology in this cohort reflects the interconnected pathophysiology of PCOS involving reproductive, metabolic, and endocrine axes [16,17]. Early identification of PCOS in such women has important implications, not only for symptom control but also for long-term metabolic health, fertility planning, and psychological well-being [18,19].

The study has certain limitations. Being hospital-based, the findings may not be fully generalisable to the community. In addition, the cross-sectional design precludes causal inferences between dermatological manifestations and endocrine abnormalities. Nevertheless, the strength of this study lies in its comprehensive clinical, biochemical, and ultrasonographic evaluation conducted over an extended study period in two tertiary care centres, providing a realistic representation of routine clinical practice.

In conclusion, the present study reinforces the need for an integrated, multidisciplinary approach in the evaluation of women presenting with acne and hirsutism. Routine screening for PCOS in this population, guided by current evidence-based recommendations, may facilitate earlier diagnosis and allow timely intervention to mitigate long-term reproductive and metabolic complications.

CONCLUSION:

The present study demonstrates that polycystic ovary syndrome is highly prevalent among women presenting with acne and hirsutism in a tertiary care setting. A considerable proportion of these women were found to have underlying PCOS, particularly when multiple hyperandrogenic manifestations coexisted. The diagnosis was strongly associated with menstrual irregularity, higher body mass index, pronounced clinical hyperandrogenism, biochemical abnormalities, and characteristic ovarian morphology on ultrasonography. These findings highlight that acne and hirsutism should not be viewed merely as isolated dermatological concerns but rather as potential clinical markers of a broader endocrine disorder. Routine, structured evaluation for PCOS in women presenting with such features may enable earlier diagnosis, facilitate appropriate counselling, and reduce the risk of long-term reproductive, metabolic, and psychological complications.

Clinical implications

The results of this study support the integration of basic endocrine screening into the routine assessment of women presenting with acne and hirsutism, particularly in tertiary care and referral settings. A coordinated approach involving dermatology and gynaecology services can help ensure timely identification of PCOS and guide holistic management strategies, including lifestyle modification, pharmacological treatment, and long-term follow-up.

Limitations

This study was conducted in a hospital-based setting, which may limit generalisability to the wider community. The cross-sectional design also restricts the ability to infer temporal or causal relationships between dermatological manifestations and endocrine abnormalities. Despite these limitations, the study provides clinically relevant insights drawn from a well-characterised cohort evaluated using standard diagnostic criteria.

Future directions

Further longitudinal studies with larger, community-based samples are warranted to assess the long-term metabolic and reproductive outcomes of women presenting initially with acne and hirsutism. Future research should also explore the impact of early diagnosis and intervention on quality of life and disease progression in women with PCOS.

Funding statement

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Conflict of interest

The authors declare that there are no conflicts of interest related to this study.

Ethical approval and consent

The study was approved by the Institutional Ethics Committees of the participating institutions. Written informed consent was obtained from all participants prior to enrolment, and all procedures were conducted in

accordance with ethical standards for research involving human participants.

Data availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request, subject to institutional and ethical guidelines

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