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Women's Health Highlight

Clinico-investigative attributes of 122 patients with hirsutism: A 5-year retrospective study from India

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ABSTRACT

Background: Hirsutism is common across ethnicities and a significant cause of negative self-esteem from presumptive loss of femininity. It remains understudied in Indian patients.
Objective: We studied the clinical and investigative attributes of patients with hirsutism.
Methods: The medical records of 233 patients with hirsutism diagnosed between 2014 and 2019 were analyzed retrospectively.
Results: The complete records of 122 patients age 14 to 45 years were available. Approximately 32% were adolescents, and 50% patients were age 21 to 30 years. The mean ± standard deviation modified Ferriman–Gallway (mF–G) score was 17.95 ± 10.58, and hirsutism was graded zero/mild in 57.4% patients. Polycystic ovaries were present in 29.5% of patients. Serum-free testosterone levels were elevated in 16.4% of patients. Associated signs of clinical hyperandrogenism, such as acne, obesity, acanthosis nigricans, and menstrual irregularities, were present in 12 patients (9.8%). Familial hirsutism occurred in 13% of patients and was idiopathic in 10.7% of patients. Significantly more patients (47.7% vs. 27.9%) with severe hirsutism did not complete investigations compared with those with mild hirsutism (45.9% vs. 21.6%), which may be due to the high cost of investigative work-up (as often stated by many patients) compared with periodic depilation.
Limitations: The mF–G score is a visual and subjective scale, and its validity remains limited by interobserver variations. The score's cut-off values may vary among races/ethnicities. A small number of patients and the retrospective study design are other limitations.
Conclusion: Hirsutism of polycystic ovary syndrome or idiopathic origin is not uncommon in Indian women. Hirsutism of adrenal or thyroid origin remains uncommon. Self-referral and high cosmetic concerns for facial hair were common in adolescents and young unmarried patients, and the majority had an mF–G score of < 8 to 16. Cut-off values for the mF–G score specific to our population assigning higher than current mF–G value to facial hair are highly desirable.

Introduction

Hirsutism, a male-pattern growth of terminal body hair in androgen-stimulated locations (face, chest, and areolae) in women, differs from hypertrichosis, which alludes to excess hair in non–androgen-dependent areas. Some degree of hirsutism is not uncommon in postmenopausal women, but it affects 5% to 10% of women of reproductive age (Azziz et al., 2000; Sharma et al., 2008). Hirsutism can be cosmetically and socially embarrassing and influence psychological wellbeing negatively, especially in young girls who are affected more often (Sharma et al., 2008). The etiopathogenesis of hirsutism is multifactorial and usually classified as androgenic and nonandrogenic in origin.

Overproduction of endogenous androgen and/or its decreased metabolism and increased peripheral conversion and receptor binding stimulates hair follicles, which are more sensitive than usual to normal androgen levels and cause hirsutism (Calvo et al., 2000; Serafini and Lobo, 1985). On the other hand, biologically active free testosterone is responsible for hair growth and is regulated by sex hormone–binding globulin. Other causes of androgenic hirsutism can be excess endogenous androgen of adrenal or ovarian origin. Polycystic ovarian disease remains the most

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common cause, in 17% to 83% of patients (Carmina, 1998). Hyperprolactinemia is an uncommon cause of hirsutism and may feature along with menstrual irregularities and/or galactorrhea. Nonandrogenic hirsutism may be familial, idiopathic, or induced by drugs (testosterone, dehydroepiandrosterone sulfate, danazol, corticotropin, high-dose corticosteroids, metyrapone, phenothiazine derivatives, anabolic steroids, androgenic progestin, acetazolamide, cyclosporine, phenytoin, diazoxide, triamterene-hydro chlorothiazide, minoxidil, hexachlorobenzene, penicillamine, and psoralens). Anorexia nervosa, hypothyroidism, and porphyria remain less common causes of hirsutism.

Clinically, obesity, striae, acanthosis nigricans, higher sebaceous activity and acne, patterned alopecia, pelvic mass, signs of virilization, or Cushing's syndrome are additional accompanying features of hyperandrogenism. Patients with severe insulin resistance, acanthosis nigricans, and seborrhea–acne–hirsutism–alopecia syndrome are usually considered a distinct group (Azziz et al., 2004a; Orfanos et al., 2000).

The modified Ferriman–Gallway (mF–G) score is a standard method for quantification of hirsutism (Hatch et al., 1981). Ultrasonography (USG) is performed for preliminary screening for polycystic ovarian disease, adrenal hyperplasia, or androgen-secreting adrenal tumors. Measurement of serum testosterone (total and free), dehydroepiandrosterone sulfate (DHEAS), and androstenedione will identify nearly 50% of patients with hyperandrogenism. We retrospectively analyzed 5-year data to study the attributes of patients with hirsutism presenting to this tertiary care center. This knowledge can have an impact on therapeutic decisions for this relatively understudied entity.

Methods

The clinical records of all patients in the reproductive age group diagnosed with hirsutism between 2014 and 2019 were studied retrospectively after approval from the institutional ethics committee. Pregnant and lactating women and patients taking oral contraceptives or other anti-androgen treatment or drugs known to cause hypertrichosis or interfere with hormonal assay were excluded. The data were analyzed for age, marital status, medical history, medications, menstrual/obstetric history, infertility, signs of hyperandrogenism, other metabolic disorders or cardiovascular disease, body mass index (BMI = weight in kg/height in m^2), and family history of hirsutism. Menstrual cycles lasting between 22 and 40 days were considered regular. Patients with oligomenorrhea (<9 menses/year), polymenorrhea (<26 days cycle), or amenorrhea (no menstruation for ≥12 months) were considered to have irregular menstrual cycles (Ehrmann, 2005; Serafini and Lobo, 1985). Infertility was defined as failure to achieve a clinical pregnancy ≥12 months after regular unprotected sexual intercourse (Zegers-Hochschild et al., 2009). Clitoromegaly was diagnosed when the clitoris (width × length) was >35 mm^2 (Tagatz et al., 1979). Patients with BMI ≥ 25 were considered obese, and morbid obesity was diagnosed when BMI was >30 (World Health Organization, 2000). The severity of hirsutism was quantified by mF–G score, which assesses the distribution and extent of terminal hair in nine anatomical sites and is graded as mild, moderate, or severe (Table 1; Hatch et al., 1981; Sachdeva, 2010; Yildiz et al., 2010). When present, the severity of acne vulgaris (Grade 1–4) and androgenetic alopecia (Ludwig's scale, Grade I–III) was measured (Adityan et al., 2009; Ludwig, 1977).

All patients were advised investigations during the proliferative phase of the menstrual cycle for estimation of free serum testosterone, luteinizing and follicular-stimulating hormone ratio (LH: FSH), serum prolactin, and thyroid hormones levels between 8:00 a.m. and 10:00 a.m. after overnight fasting. Other investigations included complete blood counts, fasting blood sugar, hepatorenal function tests, and USG for adrenals and pelvic organs. Polycystic ovaries (PCO) were diagnosed when ≥12 follicles measuring 2 to 9 mm in diameter and/or ≥10 mL of ovarian volume were noted on pelvic USG (Rotterdam ESHRE/ASRM, 2004). Per the Rotterdam criteria, the presence of two of the three elements (e.g., clinical or biological hyperandrogenism, PCO, and chronic anovulation) were used to diagnose polycystic ovarian syndrome (PCOS; Azziz et al., 2009; Carmina et al., 2006). The presence of hirsutism, acne or androgenetic alopecia, and menstrual irregularities was considered clinical hyperandrogenism (Carmina et al., 2006).

All patients with mild hirsutism were reassured and prescribed periodic depilation of extra facial hair and to apply Eflora (elflornithine 13.9% w/w, SUN Pharma Labs Ltd., India) cream twice daily over a clean face. All patients with moderate to severe hirsutism were advised to follow up with their obstetrician/endocrinologist for further management.

Statistical methods

The medical records of 111 patients were incomplete because they did not return for investigations. Their data, as well as those obtained for the other 122 patients, were tabulated using Microsoft

Table 1
Modified Ferriman–Gallwey semiquantitative scoring system for hirsutism.

Sites to be examined	Score = 1	Score = 2	Score = 3	Score = 4
1. Upper lip	Few hairs at the outer margins	Small moustache at outer margin	Moustache extending halfway from outer margin	Moustache extending to midline
2. Chin	Few scattered hairs	Scattered hairs with small concentrations	Complete cover, light	Complete cover, heavy
3. Chest	Circumareolar hairs	Circumareolar hairs with midline hair	Fusion of circumareolar hairs with midline hair giving three-quarter cover	Complete cover
4. Upper back	Few scattered hairs	More than a few scattered hairs but still scattered	Complete cover, light	Complete cover, heavy
5. Lower back	Sacral tuft of hair	Sacral tuft of hair with some lateral extension	Three-quarter cover	Complete cover
6. Upper abdomen	Few midline hairs	Rather more but still midline	Half cover	Complete cover
7. Lower abdomen	Few midline hairs	Midline streak of hairs	Midline band of hairs	Inverted V-shaped band
8. Upper arm and thigh	Sparse hair growth affecting not more than quarter of limb surface	More than a quarter coverage but still incomplete	Complete cover, light	Complete cover, heavy
9. Forearm and legs	–	–	–	Complete cover, heavy

Modified from Sharma et al., 2008.
A score of zero is given if terminal hair is absent in the examined part. Forearm and hand and lower leg and feet are not included in the hormonal score, and only a single value is added even when hirsutism involves these extremities bilaterally. Minimum score is zero and maximum is 36. The severity of hirsutism is usually graded as follows: No hirsutism < 8, mild = 8–16, moderate = 17–25, and severe > 25. Values vary in different races and ethnic groups (Escobar-Morreale et al., 2012; Hatch et al., 1981; Yildiz et al., 2010).

Office Excel software, analyzed, and compared. Continuous data are presented as mean ± standard deviation and categorical variables as frequencies and percentages. The χ^2 and student t tests were used for the statistical analysis of the categorical and parametric data, respectively. A $p < .05$ calculated at the 5% level (95% confidence limit) was considered statistically significant.

Results

Table 2 depicts the baseline characteristic of the 122 patients, age 14 to 45 years (24.6 ± 6.9 years), including 40 patients (32.8%) who were adolescents, age 14 to 20 years. The majority of the patients (n = 62; 50.9%) were age 21 to 30 years. Only 23 (18.8%) had been married for ≥1 year. The mF–G score ranged between 4 and 36 (17.95 ± 10.58), and was graded as moderate to severe (17 to >25) in 52 patients (42.6%) and none to mild (<8 to 16) in 70 (57.4%). Family history of hirsutism in a first-degree relative was elicited in 16 patients (13%), five of whom showed no investigative abnormality. Fifty-seven patients (46.7%) age 15 to 30 years had mild-to-moderately severe acne. Among 42 patients with obesity (34.4%), 12 had PCO. Morbid obesity (BMI > 30) was noted in 13 patients and acanthosis nigricans in 4. Although few patients acknowledged oiliness of facial skin, none showed seborrheic dermatitis/seborrhea or petulant pores on clinical examination.

Menstrual irregularities were reported by 76 patients (62.3%) and comprised irregular cycles in 58 (47.5%) and oligomenorrhea in 18 (14.8%). Twenty-two patients had PCO as well. All 3 patients (2.5%) with clitoromegaly had irregular menstrual cycles, two of whom also had PCO. In comparison, patients with incomplete investigative data showed no statistically significant difference in clinical characteristics from patients who completed investigations, except for greater number of patients (16.2% vs. 6.6%) in the 31- to 35-year age group who had a higher mean mF–G score (21.75% vs. 17.95%) and severe hirsutism (47.7% vs. 27.9%). However, a significantly higher number of patients (45.9% vs. 21.6%) had mild hirsutism and a history of oligomenorrhoea (14.8 vs. 1.8). None of the patients had infertility, androgenetic alopecia, hypertension, diabetes, or clinical/laboratory evidence of adrenal or Cushing's disease. No patient had a history of any incriminating drug intake.

Table 3 lists the investigative profile of the 122 patients. Pelvic USG showed PCO in 36 patients (29.5%), and the concurrent presence of hirsutism, acne, obesity, acanthosis nigricans, and menstrual irregularities in 12 patients (9.8%) was indicative of clinical hyperandrogenism. Serum-free testosterone levels were elevated in 20 patients (16.4%), and 8 (6.6%) had elevated serum DHEAS levels. Hirsutism was severe (mF–G score > 25) in patients with elevated serum testosterone but mild (mF–G score 8–16) in patients with elevated serum DHEAS. The LH/FSH ratio was increased in 29 patients (23.8%), of whom 7 had PCO, 14 had menstrual irregularities, and 21 had normal serum-free testosterone levels.

Serum prolactin levels were increased in 13 patients (10.7%) who had normal thyroid function test results, and 4 of these patients had PCO. Isolated elevation of serum thyroid stimulating hormone levels occurred in 6 clinically euthyroid patients (4.9%). Menstrual irregularities and PCO were noted in 4 and 2, patients, respectively. Thirteen patients (10.7%) showed no clinical or investigative abnormality, except for family history of hirsutism in two.

Information extracted from free-text fields in the medical records showed that patients in the adolescent group had expressed more apprehension about facial hair than acne compared with those with late-onset acne. When contacted by telephone at the time of data compilation, most patients acknowledged that they had been married, had had a normal pregnancy, had no recurrence of hirsutism, and were satisfied with the long-term outcome of the prescribed treatment/counseling.

Table 2
Baseline clinical characteristics of patients with hirsutism.

Characteristics		Number of patients with investigation records (%), n = 122	Number of patients with no investigation records (%), n = 111	p-value*
Age, years	Range	14–45	14–43	–
	Mean ± standard deviation	24.6 ± 6.9	25.20 ± 7.0	.5
	14–20	40 (32.8)	38 (34.2)	.8
	21–25	34 (27.9)	29 (26.1)	.7
	26–30	28 (23.0)	26 (23.4)	.9
	31–35	8 (6.6)	18 (16.2)	**.02**
	36–40	8 (6.6)	8 (7.2)	.8
	41–45	4 (3.3)	2 (1.8)	.4
Marital status	Married	23 (18.9)	18 (16.2)	.5
	Unmarried	99 (81.1)	93 (83.8)	.5
Family history of hirsutism	Present (no investigative abnormity in five cases)	16 (13.1)	4 (3.6)	**.009**
mF–G score (Severity)	Range	4–36	4–36	–
	Mean ± standard deviation	17.95 ± 10.58	21.75 ± 11.08	**.008**
	<8 (no hirsutism)	14 (11.5)	16 (14.4)	.05
	8–16 (mild)	56 (45.9)	24 (21.6)	**.0001**
	17–25 (moderate)	18 (14.8)	18 (16.2)	.7
	>25 (severe)	34 (27.9)	53 (47.7)	**.001**
Menstrual abnormalities (PCOS in 22 cases)	Irregular cycles	58 (47.5)	41 (36.9)	.10
	Oligomenorrhoea	18 (14.8)	2 (1.8)	**.0004**
Other clinical features	Acne	57 (46.7)	64 (57.7)	.09
	Obesity (BMI > 25–30; nine cases with PCO)	29 (23.8)	20 (18.0)	.27
	Morbid obesity (BMI > 30; three cases with PCO, AN in four cases)	13 (10.7)	13 (11.7)	.08
	Striae	13 (10.7)	0	–
	Clitoromegaly (all had irregular menses; PCO in two cases)	3 (2.5)	0	–

AN, Acanthosis nigricans; BMI, body mass index, mF–G score, modified Ferriman–Gallwey score; PCO, polycystic ovaries.
No patient had infertility or patterned baldness.
*$P < .05$ calculated at 5% level (95% confidence interval) was considered statistically significant and is depicted in bold.

Table 3
Baseline investigative characteristics of patients with hirsutism.

Characteristics		Number of patients (%), n = 122
USG pelvis	PCO (menstrual irregularities in 22 cases, increased serum testosterone and LH:FSH ratio in seven cases each)	36 (29.5)
Free-serum testosterone (normal = 0.7–3.6 ng/mL)	Increased (seven cases with PCO, increased DHEAS in three cases)	20 (16.4)
LH:FSH ratio (normal = 2:1)	Increased (seven cases with PCO, normal serum testosterone in 21 cases, menstrual irregularities in 14 cases)	29 (23.8)
DHEAS (normal = 35–430 ng/mL)	Increased (two cases with PCO, increased serum testosterone in three cases)	8 (6.6)
Serum prolactin (normal = 24 ng/mL)	Increased (four cases with PCO)	13 (10.7)
Thyroid function tests (T3, T4, TSH)	Elevated serum TSH with normal serum prolactin levels	6 (4.9)

DHEAS, dehydroepiandrosterone sulfate; LH:FSH, luteinizing hormone:follicular stimulating hormone; PCO, polycystic ovaries; TSH, thyroid-stimulating hormone; USG, ultrasonography.

Discussion

This study of patients age 14 to 45 years (mean: 24.6 ± 6.9 years) corroborates the reported prevalence of hirsutism among women age 13 to 47 years (mean: 20.9 ± 28.3 years; Ansarin et al., 2007; Chhabra et al., 2012; Sharma et al., 2008, 2012). Hirsutism is often considered to lower one's cosmetic appeal and perhaps marriage prospects, so most patients seek early consultation, which could be a possible reason for the presence of nearly 81% unmarried women in this study as well (Ansarin et al., 2007; Sharma et al., 2012). Similarly, >57% of patients, even with an mF–G score of <8 to 16 (no or mild hirsutism), had a self-referral and expressed high cosmetic concerns. Interestingly, significantly more patients with severe hirsutism (47.7% vs. 27.9%) did not complete investigations compared with those with mild hirsutism (45.9% vs. 21.6%). This is perhaps because of the high cost of investigative work-up (as often stated by many patients) compared with that for periodic depilatory measures.

The mean hirsutism score of 17.95 (standard deviation: 10.58) and concurrent clinical hyperandrogenism in 9.8% of patients conformed with most reports (Azziz et al., 2003; Sharma et al., 2012; Zargar et al., 2002). The mean mF–G score in this study was highest for the upper lip, chin, and extremities and low for the chest, lower abdomen, and back. Menstrual irregularities were noted in 62.3% and oligomenorrhea in 14.8% of our patients, and concurrent PCO was present in 28.9%. These remain the most reported abnormalities in 22.8% to 50.8% of patients with hirsutism, and PCO occurs in up to 65% to 90% of women with oligomenorrhea (Azziz et al., 2003; Balen et al., 1995; Sharma et al., 2012; Solomon et al., 1999; Zargar et al., 2002).

Acne appears to be another consistent feature of hyperandrogenism in 27% to 60% of patients and occurred in 46.7% of our patients, mostly in their 20 s (Balen et al., 1995; Franks, 1989; Sharma et al., 2012). However, their mild-to-moderate severity did not corroborate serum androgenemia, which perhaps reflects our patients' high concerns rather than true associations. Nearly 6% to 25% of patients with hyperandrogenism also tend to be overweight or obese, and risk is enhanced in the presence of PCOS (Ansarin et al., 2007; Sharma et al., 2012; Zargar et al., 2002). Conforming to these trends, in 34.4% of our obese patients, morbid obesity was seen in 13 patients, and 12 of these patients also had PCOS. However, the consensus definition of PCOS considers obesity only as an association and not a diagnostic criterion because only 40% to 50% of women with PCOS are overweight (Azziz et al., 2009). Striae in 13 patients and acanthosis nigricans in 4 patients (with obesity) appear more obesity-related; androgenetic alopecia and seborrhea were apparently less common signs of hyperandrogenism in our patients.

Elevated free-serum testosterone levels in 16.4% and/or serum DHEAS in 6.6% of patients (three patients had elevated levels of both) appears consistent with biochemical hyperandrogenism in this study and corroborates the results of previous reports (Azziz et al., 2004b; Carmina et al., 2006). Hirsutism was severe (mF–G score > 25) in patients with elevated serum testosterone but mild (mF–G score 8–16) in patients with elevated DHEAS. However, these observations need careful interpretation because the severity of hirsutism may correlate poorly with the severity of androgen excess, and increased DHEAS levels may not always reflect the status of adrenocortical steroidogenesis (Azziz et al., 2009; Escobar-Morreale et al., 2012).

Virilizing ovarian neoplasia (thecal cell tumors, Leydig cell tumors, luteoma of pregnancy, hilar cell tumors, arrhenoblastomas) and PCOS remain common causes of ovarian hyperandrogenism. However, nearly 75% to 80% of cases of hyperandrogenism are due to PCOS alone, and hirsutism remains its most common clinical sign (Carmina et al., 2006; Azziz et al., 2004b; Sharma et al., 2008). The prevalence of hirsutism in PCOS varies between 17% and 83% (Carmina, 1998; Sharma et al., 2008). Polycystic ovaries were detected in 29.5% of our patients. However, by using the Rotterdam criteria to diagnose PCOS, only 12 patients (9.8%) had clinical hyperandrogenism of PCOS origin (Rotterdam ESHRE/ASRM, 2004). Furthermore, a single measurement of LH and/or FSH may not be a sensitive method for diagnosing hyperandrogenism because these are more or less released in a pulsatile manner and their serum concentration varies over the menstrual cycle (Ehrmann, 2005). This is also evident in our 29 patients (23.8%) having an increased LH:FSH ratio but PCO-elevated serum-free testosterone levels, and abnormal menstrual cycles (features of hyperandrogenism) were observed only in seven, eight, and 14 patients, respectively.

Adrenal causes include congenital adrenal hyperplasia (classic), late-onset adrenal hyperplasia, Cushing's syndrome, and androgen-producing adrenal tumors, which are observed in approximately 10% of cases (King and Lack, 1979; Sharma et al., 2012). However, up to 8% of women with hyperandrogenism may have 21-hydroxylase-deficient, nonclassic, congenital adrenal hyperplasia that remains asymptomatic until adolescence or adulthood (Azziz et al., 1994; Sharma et al., 2012; Speiser et al., 2000). Clitoromegaly also has been reported in patients with late-onset adrenal hyperplasia (Sharma et al., 2012). Although none of our patients had an adrenal abnormality and we could not assess our patients for 21-hydroxylase-deficiency, the presence of clitoromegaly in 2.5% of patients with menstrual irregularities and PCO in two of them is perhaps a manifestation of late-onset adrenal hyperplasia.

Pituitary adenomas that produce excess corticotropin or prolactin, causing Cushing's syndrome or acromegaly, may also present with hirsutism. Although the exact mechanism of hirsutism in hyperprolactinemia is poorly understood, it perhaps results from a direct effect on ovarian and adrenal steroidogenesis or

production of sex hormone–binding globulin (Zegers-Hochschild et al., 2009). Hyperprolactinemia is also an uncommon cause of hirsutism in 20% of patients with coexistent galactorrhea, menstrual irregularities, or hypothyroidism (Schwartz and Flink, 1985; Sharma et al., 2012). Hirsutism in 10.7% of our patients with elevated serum prolactin levels appears more from PCOS-associated hyperandrogenism in view of concurrent polycystic ovaries and elevated-free serum testosterone, LH:FSH ratio in 4 patients, and/or oligomenorrhea in 9 patients, and no thyroid abnormalities.

Hirsutism can also be non–androgen dependent when it is familial, drug induced (vide supra), or in 20% of patients without any apparent cause (idiopathic). However, nonandrogenic anabolic drugs will usually cause vellus hypertrichosis rather than true hirsutism. Women with idiopathic hirsutism have normal ovulatory function and circulating androgen levels (Azziz et al., 2000; Carmina, 1998; Carmina et al., 2006). It has been attributed to androgen receptor polymorphisms, altered androgen metabolism, or increased 5α reductase activity (Calvo et al., 2000; Serafini and Lobo, 1985). Except for two patients with hirsutism in first-degree relatives, in 13 patients (10.7%) hirsutism can be considered to be of idiopathic origin in view of a completely normal investigative profile.

Limitations

A small number of patients, lack of controls and long-term follow-up, and retrospective study design remain major limitations. mF–G score is a visual and subjective scale, and its validity is limited by interobserver variation. It estimates total amount of terminal body hair and not the regional distribution of excessive hair growth, which varies substantially among races and ethnicities. Monitoring ovulation/anovulation by recording daily basal body temperature or luteal progesterone level estimation was not performed. None of the patients were assessed for hyperandrogenic-insulin resistance or sex hormone–binding globulin and anti-Müllerian hormone for PCOS diagnosis because of financial constraints and lack of in-house facilities. None of the patients agreed to laser hair reduction, and follow-up for therapeutic outcome was not a part of the study.

Conclusion

Hirsutism, whether of PCOS origin or idiopathic, is not uncommon in Indian women, and the majority of patients have a low mF–G score (<8–16). However, hirsutism of adrenal or thyroid origin remains infrequent in our patients. Self-referral and high cosmetic concerns about facial hair were more common in adolescents and young unmarried patients compared with those with other body sites involved predominantly. Cut-off values of the mF–G score need to be established for Indian women. Facial hair needs to be given a higher value than the current one in view of the psychological/cosmetic embarrassment caused. Although pharmacotherapy to reduce androgen secretion/action (drugs are only partially effective on terminal hair) may be added when hirsutism is severe and widespread in androgen-sensitive areas, other patients may improve over time with conservative depilatory measures alone, and watchful waiting may be preferred over more intensive pharmacotherapy. However, better-designed experimental and prospective linear studies with large sample size and controls or population-based studies are highly desirable to make any recommendations. Future researchers also need to develop a hirsutism scoring system with cut off values that are applicable uniformly to all ethnicities, as well as investigations with a short turnaround time that are affordable and easy to perform and low-cost therapeutic modalities that are safe and effective in a short period.

Conflicts of interest

None.

Funding

None.

Study approval

The author(s) confirm that any aspect of the work covered in this manuscript that has involved human patients has been conducted with the ethical approval of all relevant bodies.

Appendix A. Supplementary data

For patient information on skin cancer in women, please click on Supplemental Material to bring you to the Patient Page. Supplementary data to this article can be found online at https://doi.org/10.1016/j.ijwd.2020.11.007.

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