



Prevalence of Hirsutism among Females with Chronic Obstructive Pulmonary Disease and Hyperthyroidism at Tertiary Care Hospital of Sindh, Pakistan

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Authors' contributions

This work was carried out in collaboration among all authors. Authors AH, MQ and DSM designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Authors NFP, MM and SS managed the analyses of the study. Authors SS, RS, TA and AA managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Introduction: Hirsutism is in fact unwanted growth of hairs on the various parts of body of females. Hairs arises particularly on those parts of the body on which hairs are not grown normally in females such as chin, upper lips, abdomen, legs, shoulder and back of the body. Various reasons

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are reported till so far for the hirsutism development. The prevalence of hirsutism was very low.

Methodology: Across-sectional study was conducted at tertiary care hospital of Sindh, Pakistan for the period of 06 months. A well structured questionnaire was developed comprises on three parts. Which was given to the female students and all the participants were guided regarding filling of that proforma and Ferriman-Gallway scale was used to measure the frequency parameters of Hirsutism.

Results: The condition of hirsutism was found among 183 participants, the distribution of hairs was quite different in all selected study subjects. 26 females had hairs on chin, 154 females had hair grown on upper lips, 24 females had hairs on lower abdomen, 13 had hairs on upper abdomen, 11 participants had hairs on arms and legs whereas only 04 girls had hair grown on their shoulders and back of the body. As far as their family background is concern 41 females were belongs to upper class, 117 females belongs to middle class while 25 females were belonging to lower class families.

Conclusion: The prevalence of hirsutism was very much common among the females with the associated condition of Idiopathic hirsutism (53%), pulmonary chronic obstructive diseases (31.5%) and Acanthosis nigricans was the most widely recognized cutaneous finding related with hirsutism.

Keywords: Ferriman gallway; abdomen; hirsutism; upper chin.

1. INTRODUCTION

Hirsutism may be characterized as excessive growth of redundant hairs appears on the body of females that did not exist under normal physiological condition [1]. Hairs are grown especially in androgen reliant regions including chin, upper lip, chest, abdomen, back and anterior thighs [2,3]. Hirsutism influences around 8 to 10% of females at puberty age [4]. Hirsutism actually symbolizes alteration of normal hair growth, but infrequently is it a portent of a severe primary stipulation [5,6]. Psychological studies regarding hirsutism suggest that it has a momentous impact and unfavorably concern with the quality of life. Ethnic background and hereditary feature also interact for the augmentation of hair growth [7]. Virilization is specified condition in which females develops the hair growth like male-pattern and mannish physical qualities [8]. Virilization occur due to significantly increase level of androgen than the normal values and effected person develop the supplementary signs and symptoms likewise alteration of vocal card, shrivel of breast, enhancement of muscle immensity, libido condition and clitoromegaly [9,10]. Virilization is actually life threatening condition that induces the chances of ovarian and adrenal gland cancer. People with hirsutism are mentally depressed and their social & cognitive behavior is upshot more [11]. Hirsutism people are unable to attend the social gatherings. 80-85% cases are reported with alteration in androgen regulation whereas some cases are found idiopathic and caused by abnormality of endocrine system, Poly Cyst

Ovarian (PCO) syndrome, over consumption of steroids and obesity [12]. According to research conducted in Semnan University of Medical Sciences, the results for hirsutism prevalence were about 28%. This research was carried out at tertiary care hospital of Sindh, Pakistan, to evaluate the frequency of hirsutism among various age groups of females along with their associated symptoms [13,14].

2. METHODOLOGY

A cross-sectional study was carried out at tertiary care hospital of Sindh, Pakistan for the period of 06 months from February 2018 to August 2018. A well structured questionnaire was developed and female participants were facilitated to fill out these proforma. Initial part consist of demographic data including Name, Gender, Age, date of birth, contact number, marital status and address whereas other part of questionnaire was totally based on the questions regarding Hirsutism and its associated symptoms such as distribution of hairs on various parts of the body including arms, legs, upper lip, abdomen, chest and back of the body. Ferriman-Gallway scale was used to measure the prevalence of hirsutism among all selected participants. Causative agents for the development of hirsutism were measured in third part of the proforma including hormonal dysfunction, obesity, infertility, vocal card alteration. Last part of questionnaire also comprises upon the physical examination and magnitudes of hair growth among affected participants. Latest statistical software 23.00 was used to analyze the data.

3. RESULTS

In the current study 324 female participants took part in the research and from them total 183 (56.4%) females had reported with the hirsutism condition whereas 141 (43.5%) had no any sign of hirsutism. The details are given in Table 1.

As far as age groups were concern the results were quite different such as 86 females with hirsutism were within the age group of (18-22 years), 39 study subjects were included in the age group of (23-27 years), 49 females were grouped in the age of (28-32 years) whereas only 09 females were came under the category of (33-37 years), as mentioned in the Table 2.

In hirsutism, the hairs appeared on various parts of the body of the females naturally which didn't grow normally. As the results were concerned

numerous students reported with appearance of hairs on their bodies.

Various reproductive disorders and associated disease were more prone to cause hirsutism among females likewise chronic obstructive pulmonary diseases, hyperthyroidism, Cushing syndrome, congenital hyperplasia were also found among the study subjects.

Table 1. Frequency of Hirsutism among participants

Frequency	Number of patients	Percentage (%)
Hirsutism	183	56.4
No any Hirsutism	141	43.5

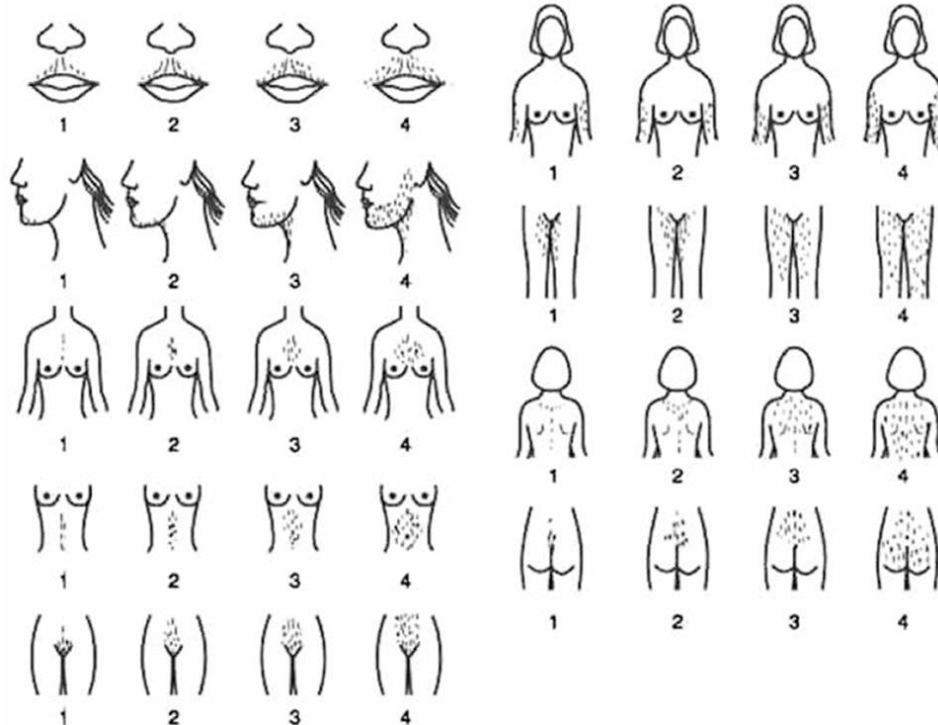


Fig. 1. Ferriman-gallway scale

Table 2. Age group wise distribution of participants

Age wise groups	Number of patients	Percentage (%)
18-22	86	46.9%
23-27	39	21.3%
28-32	49	26.7%
33-37	09	4.9%



Fig. 2. Patients with poly cyst ovary syndrome



Fig. 3. Steroid induced hirsutism patient

Table 3. Association diseases among hirsutism

Association	Frequency	Percentage (%)
Acne	73	39.8%
Acanthosis Nigricans	41	22.4%
Androgenic alopecia	34	18.5%
Infertility	35	19.1%

Table 4. Distribution in accordance with Body Mass Index of all patients

BMI group	Frequency	Percentage (%)
Normal (18.5-24.9)	147	45.37%
Over Weight (25-29.9)	113	34.8%
Obesity (30-39.9)	55	16.9%
Morbid Obesity (40 & ^)	09	2.7%

Table 5. Ferriman-gallway scoring (Abraham's classification)

Ferriman-gallway score	Frequency	Percentage (%)
Discrete (8-16)	175	54%
Moderate (17-25)	149	45.98%
Total	324	100%

Table 6. Etiological distribution of study subjects

Etiology	Frequency	Percentage (%)
Idiopathic	117	36.11%
Chronic obstructive pulmonary diseases	89	27.46%
Hyperthyroidism	35	10.80%
Drugs	67	20.67%
Congenital adrenal hyperplasia	09	2.77%
Cushing syndrome	07	2.16%

4. DISCUSSION

Current research comprised of prevalence of hirsutism among the females with chronic obstructive pulmonary disease and hyperthyroidism that affect many females [15]. Hirsutism occurs due to an exogenous or endogenous enhanced level of androgens or from expanded affectability of the hair follicles to typical serum androgen levels (end organ brokenness). Appraisal of hirsutism incorporates the time of beginning, pace of movement and related indications and signs. Normally hair development is moderate and active in all beings. Unexpected turn of events and quick movement of hirsutism recommends the chance of an androgen discharging tumor, in which case virilisation may likewise be available. Number of females develops this type of condition prior to the age of 20 years. So, our research comprised on numerous age groups from 14 to 48 years, mean age was 29.19 years. A large portion of the patients (72.6%) were in the regenerative age gathering (15 to 35 years). This component is additionally recorded by Ahmad et al, Sharma et al and Atallah et al. [16,17]. Unpredictable cycles from the hour of menarche were bound to result from ovarian as opposed to over quantity of adrenal androgen. We noted unpredictable menstrual cycle in 35 patients (48%) due to obstructive diseases, Cushing's syndrome and hypothyroidism. This connected with concentrate by Tehrani and Jalali [18]. Around 22% (16) of patients had family ancestry of hirsutism which associates with concentrate by Noorbala and Lorenzo [19] among [16] patients [11], had first degree family members with hirsutism and 7 had chronic obstructive pulmonary diseases. In our investigation 67% of patients were better than

average BMI (Body Mass Index) extend (>25) as recorded by Atallah et al (51%) [20]. In the current examination, skin break out was seen in 17.8% of patients, acanthosis nigricans in 31.5% and androgenetic alopecia in 15% as opposed to a prior investigation by Sharma in which skin inflammation was the most well-known association [6]. A basic and ordinarily utilized strategy to review hair development is old style or adjusted Ferriman-Gallway scale where every one of nine androgen delicate destinations (upper lip, jaw, chest, mid-region, pelvis, upper arms, thighs, upper back, lower back) are evaluated from 0 to 4 [12]. It is typical for the most ladies to have some hair development in androgen touchy zones. Score of at least 8 propose overabundance androgen interceded growths [21]. In this examination most extreme Ferriman-Gallway score was [21] which was seen in inherent adrenal hyperplasia. Normal Ferriman-Gallway score was [15]. The vast majority of the patients (73%) had Ferriman-Gallway score in the scope of 8 to 16. All patients were progressively worried about facial hair. Ahmad et al likewise recorded Ferriman-Gallway score from 10 to 34 and confront was the most widely recognized site [22]. In hirsutism, key androgens that might be emitted in abundance incorporate testosterone which for the most part starts from the ovary, DHEAS which is of adrenal inception and androstenedione that began from either the ovary or the adrenal gland. Hormonal estimation is generally done on days 4 to 10 of the menstrual cycle. In androgen discharging tumors, quickly advancing hirsutism, highlights of virilization (developed voice, clitoromegaly, expanded bulk, and expanded moxie) and essentially raised androgen level had seen [23,24,25].

5. CONCLUSION

It was concluded that the prevalence of hirsutism was very much common among the females with the associated condition of Idiopathic hirsutism (53%), pulmonary chronic obstructive diseases (31.5%) and Acanthosis nigricans was the most widely recognized cutaneous finding related with hirsutism. Hirsutism was more common among the obsess people and it occurs mostly prior to the age of 20 years.

CONSENT

As per international standard or university standard, Participants' written consent has been collected and preserved by the authors.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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