To Evaluate Frequency Of Hirsutism In Afghan Women

Amin Jan[1], Sahibzada Saeed Jan[2], S. Humayun Shah[3], Anwar Sultana[4]

ABSTRACT

BACKGROUND: Hirsutism refers to the presence of excessive terminal hair in androgen-dependent areas of the female body which negatively influences psychological well-being of young women. Hirsutism is among the most frequent medical complaints. It may or may not be associated with menstrual disturbance. Different causes of hirsutism reported are Polycystic ovary syndrome, Idiopathic hyperandrogenemia. Adrenal hyperplasia, Androgen-secreting tumors and Hyperprolactinemia. Human skin has three types of hair at different stages, lanugo hair, vellus and terminal hair. All are produced by different kinds of hair follicles. All hair follicles that an individual possesses are present at birth. Their number does not change. It is the increased density of thick terminal hair that has converted from vellus hair. Hirsutism usually occurs as a result of interaction between the level of circulating androgens and the sensitivity of hair follicles to androgens.

OBJECTIVES: To determine the frequency of Hirsutism inAfghan women.

MATERIAL & METHODS: This study was conducted by the department of Physiology, North West School of Medicine, Hayatabad Peshawar in collaboration with the Gynecology Department of Khyber Teaching Hospital, Peshawar. Afghan women attended the outpatient department of Gynecology, Khyber Teaching Hospital, Peshawar, between the ages 13 to 40 years were included in the study for the duration of about two years. Essential information of patients was taken using a detailed proforma. Baseline data of all the were patients obtained. Every patient was scored according to the Farriman-Gallwey scoring system. The pelvic and abdominal ultrasound was carried out for all the patients. Some of them had laparoscopy for the details about the internal pelvic organs. Hormonal assays, during the proliferative phase of menstrual cycle were performed. The hormones studied were Testosterone, Thyroid Stimulating Hormone, T3, T4 and Cortisol, both morning and evening values.

RESULTS: A total of about 1500 patients were seen in the Gynecology OPD at Khyber Teaching Hospital, Peshawar for the duration of about two years. 50 patients were found to have various degrees of hirsutism. Only some of these came with hirsutism alone. Most of them presented with an associated gynecological problems, such as Oligomenorrhea and infertility. Polycystic ovaries and obesity were the common findings. Perimenopausal and postmenopausal women wereexcluded from the study. Mean age was 28.3±4 years. 44 (88.7%) of the patients were married, 32 (64%) presented with Oligomenorrhea, 35 (70%) presented with primary or secondary infertility. Only 6 patients (12%) complained of hirsutism. Polycystic Ovarian Disease was found in 58%. Testosterone was raised in 17 patients (44.7%). Leutinising Hormone& Follicle Stimulating Hormone ratio was more than double the normal value in 16 patients. Prolactin was raised in 4 patients, one patient was pregnant and two patients developed the hirsutism due to unknown cause.

CONCLUSION: Incidence of the hirsutism could not be calculated as it varies from community to community. Various factors involved are, awareness about the disease, poor education and low socio-economic status. Majority of patients fall into the idiopathic group, a substantial number have Polycystic Ovarian Disease. Adrenal causes for hirsutism are rare.

Key words: *Hirsutism, menstruation, Adrenal hyperplasia, Androgen-secreting tumors, Hyperprolactinemia*

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INTRODUCTION:

Hirsutism is a difficult condition to define. There are many definitions of hirsuitism that vary in their explanation, but-all hinge on a single problem that refers to the presence of excessive terminal (coarse) hair in androgen-dependent areas of the female body. Along with cosmetic discomfort, patient considers it to be a sign of malignancy, changing sex and infertility. Psychological well-being,especially of young women is negatively influenced by hirsutism[1]. It is among the most frequent medical complaints in females [2].Although hirsutism generally reflects hormonalim balances, it can rarely be related to a life-threatening disorder [2]. It may or may not be associated with menstrual disturbance. Hirsutism should be distinguished from virilism, which is usually secondary to the Adrenal hyperplasia, Polycystic Ovarian Syndrome or androgen producing tumor. Hirsutism should also be differentiated from hypertrichosis, which is generalized excessive hair growth, not caused by androgen excess. Hypertrichosis may be congenital or caused by metabolic disorders such as Thyroid dysfunction, Porphyria, and Anorexia nervosa[3].

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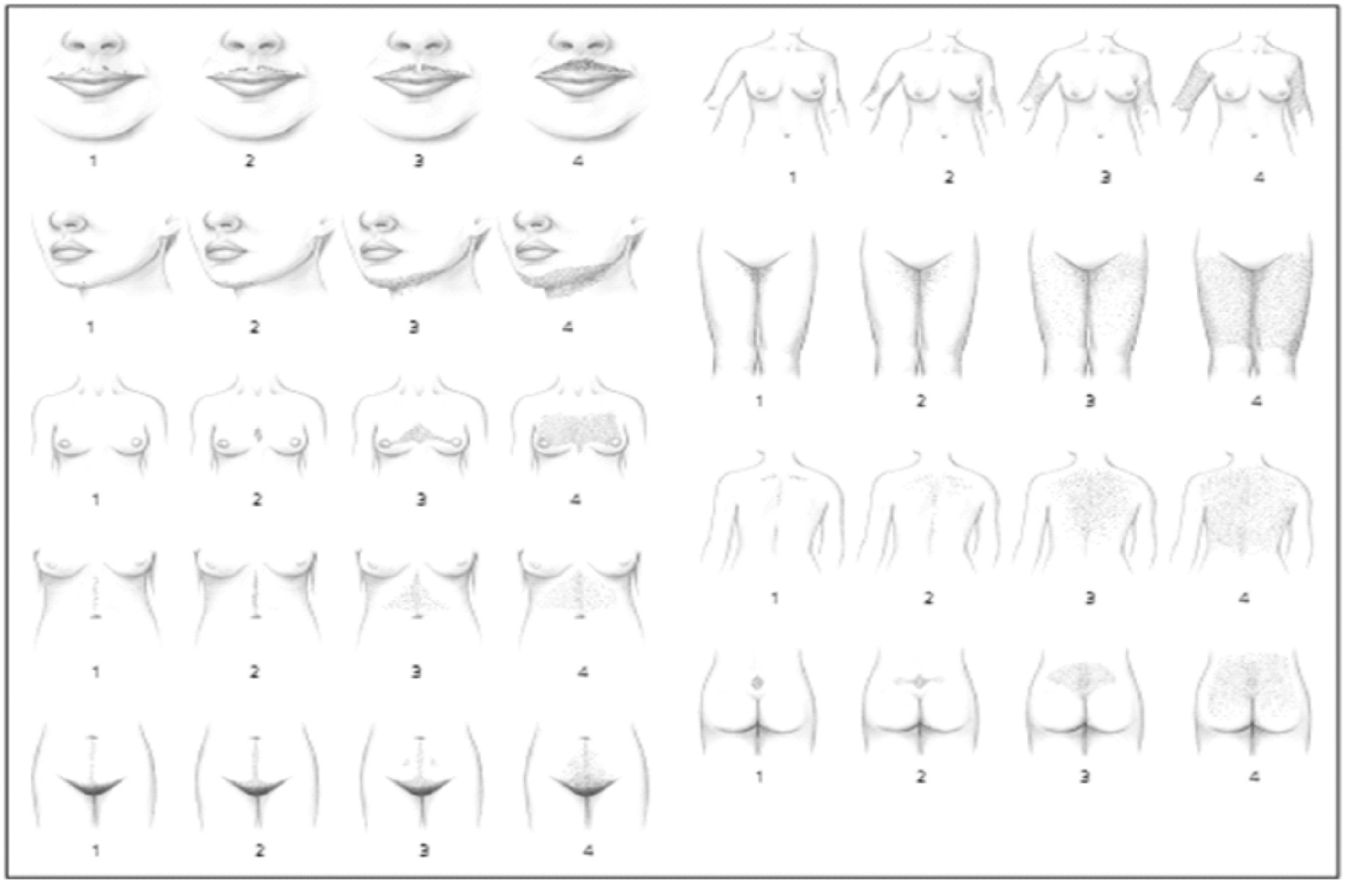


Figure 1: The Ferriman-Gallwey scale for hirsutism.

The distribution and degree of hair growth is often used to classify hirsutism, such as through pictorial scales. Ferriman-Gallwey scale is the most widely recognized scoring method, devised in 1961 (Figure1)[4,5].

A score of 1 to 4 is given for nine areas of the body. A total score less than 8 is considered normal, a score of 8 to 15 indicates mild hirsutism, and a score greater than 15 indicates moderate or severe hirsutism. A score of 0 indicates absence of terminal hair.

This scale is limited by its subjective nature and its failure to account for all androgenic areas (e.g., sideburns, buttocks), ongoing use of cosmetic measures, focal hirsutism or effect on patient well-being. Given these limitations, some experts recommend use of the term "patient-important hirsutism" to indicate symptoms, significant enough to cause the patient distress, regardless of the degree of physical findings[6].

Hirsutism may be accompanied with one or more of the followings [7]

Clitoral hypertrophy
Breast atrophy
Male type of baldness
Deepening of voice

Hirsutism is more common in Mediterranean women and is uncommon in Asian women. Hirsutism occurs in approximately 7% of women and has an estimated economic burden in the United States for more than $600 million annually[7].

Three types of hair are produced by different kinds of hair follicles in human skin. These may vary with age or with the influence of hormones. All hair follicles that an individual possesses are present at birth. Their number does not change. The only change is the increased density of thick terminal hair because of the conversion of vellus hair into terminal hair. During fetal life, skin is covered with lanugo hair which is fine, soft, non-pigmented and un-medullated and shed in utero during the eighth to ninth months of gestation [8]. Two types of hair appear during postnatal life after the disappearance of lanugo hair; vellus and terminal hair. Vellus hair is short, straight and non-pigmented, which are the pre-pubertal hairs while terminal hair, are thicker, curlier, pigmented and hence more visible. Terminal hair is of three types[8,9].

(i) Sex steroid independent (Scalp and eye brows')
(ii) Ambisexual (sensitive to low levels of sex steroids and found on pubic area and axillae)
(iii) Sexual (found only in males on face, upper lip, chin, & upper pubic triangle
Terminal hair is limited to scalp, eye brows and eyelashes before puberty. During peri pubertal period vellus follicles in specific areas such as axillae and pubic region develop into terminal hair (sexual hair) under the influence of increased circulating androgen levels [8,9].

Interaction between the level of circulating androgens and the sensitivity of hair follicles to androgens results in hirsutism[9]. However, the degree of hirsutism does not always correlate with the level of androgens, since there is a wide variation in the response of hair follicles to androgens among individuals, which explains the development of hirsutism without excess androgens in women with idiopathic hirsutism [10].

Testosterone is the predominant type of circulating androgen found in women with hyperandrogenemia, which is produced by the adrenals and ovaries as a by-product of steroidogenesis, or, by peripheral metabolism of pro-hormones; androstenedione and dehydroepiandrosterone sulfate (DHEAS). Testosterone and dihydrotestosterone produced by peripheral conversion of testosterone are the only androgens which are able to activate the androgen receptors [11].

Hirsutism itself is not a disease but the commonest manifestation of excess androgen in women[12]. Different causes of hirsutism reported are polycystic ovary syndrome, Idiopathic hyper androgenemia, Adrenal hyperplasia, Androgen-secreting tumors and Hyperprolactinemia[13,14] As hirsutism negatively influences psychological well-being of young women and as there was very little research work on Afghan women hirsutism, so there is an intense need to evaluate hirsutism in Afghan women.

MATERIAL AND METHOD:
This study was conducted by the department of Physiology, North West School of Medicine, Hayatabad Peshawar in collaboration with the Gynecology Department of Khyber Teaching Hospital, Peshawar. Afghan women attended the outpatient department of Gynecology, Khyber Teaching Hospital, Peshawar, between the ages of 13 to 40 years were enrolled in the study. The total study duration was two years.

Patients with any systemic diseases that could alter the hirsutism like Androgen producing tumors (e.g Luteoma of pregnancy, Arrhenoblastomas, Leydig cell tumours, Hilar cell tumours and Thecal cell tumours), Adrenal causes (e.g Androgen producing adrenal tumour, Congenital adrenal hyperplasia and Cushing syndrome), Acromegaly and Hypothyroidism etc were excluded from the study. Women having drug induced hirsitusm including. Glucocorticoids, Danazol, Sodium valproate and Androgenic Progestogens etc. were also excluded from the study.

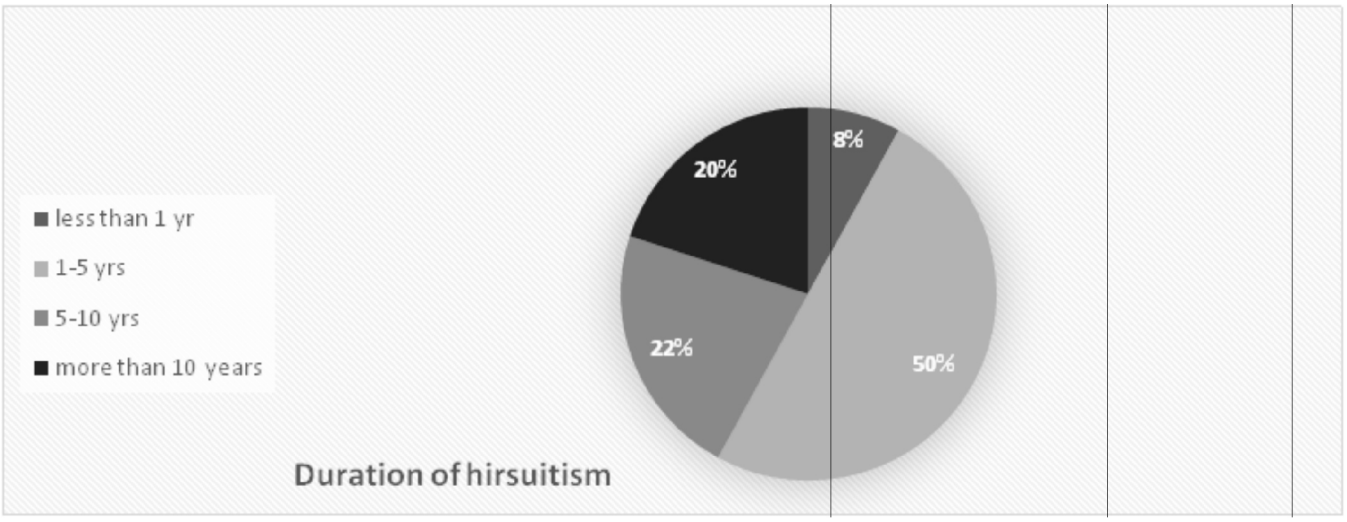
Detailed proforma was made which contained the detail history of the patient including age at which hirsutism developed, duration of hirsutism, menstrual and obstetrical history, family history, past medical history, history of any drug intake and any change in the voice. All the patients were weighed to know the obesity status of the patients. B.P was checked. Every patient was scored according to the Farriman-Gallwey scoring system. Breasts were examined for atrophy, Galactorrhoea and for distribution of hair. Abdominal and pelvic examination was made especially for presence of abdominal masses, pelvic masses, and Clitoromegaly. All the patients had a pelvic and abdominal ultrasound to assess the ovaries and adrenals. Some of them had laparoscopy for infertility/tubal ligation. Details about the internal pelvic organs were assessed by these procedures. All the patients were asked to have hormone assay, during the proliferative phase of menstrual cycle. The hormones studied were Testosterone, Thyroid Stimulating Hormone, T3,T4 and Cortisol, both morning and evening values (AM & PM values).

RESULTS:
A total of 50 patients out of the 1500 patients, seen in gynae OPD were found to have various degrees of hirsutism. Only some of them came with hirsutism alone. Most of them presented with an associated gynecological problem such as Oligomenorrhea and infertility.

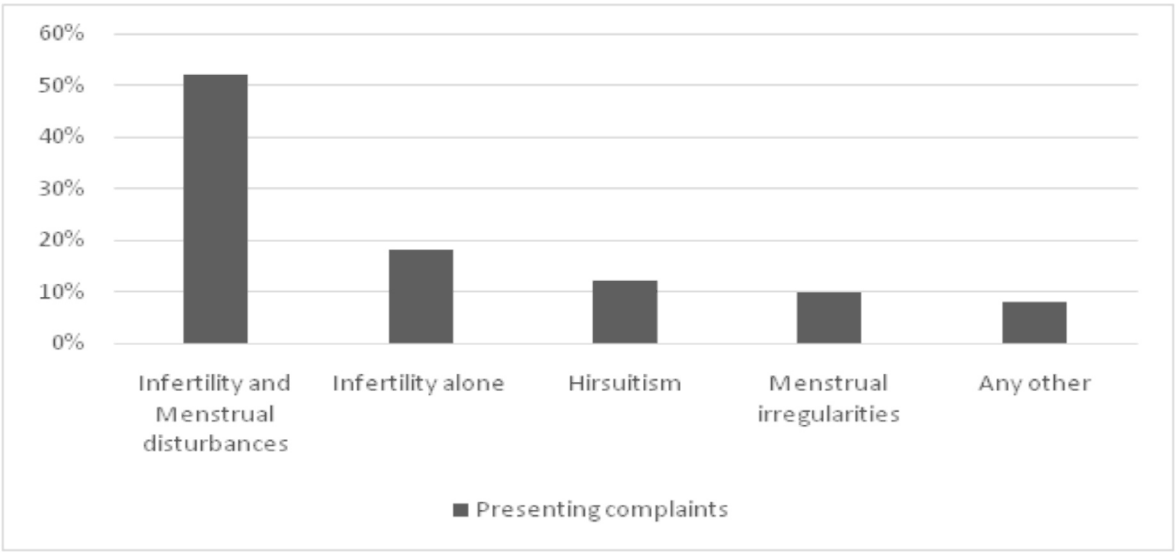
Table No. 1.

Total number of the patients studied (50),Incidence of infertility and obesity in hirsute women:

Mean age	(Mean ± S.D) 28.3± 4 (13-40 Years)
Married	44 (88%)
Un-married	6 (12%)
Primary Infertility	24 (48%)
Secondary Infertility	11 (22%)
Total	35 (70%)
Obese	35 (70%)
Non-Obese	15 (30%)



Pie Chart : Classification according to duration of hirsutism



Out of 4 patients whose duration of hirsutism was less than one year, 1 patient was diabetic and hypertensive, one patient was pregnant (duration of hirsutism 3 months) and Cause of hirsutism could not be detected in the remaining two patients who had normal investigations.

Table No 2 and Graph No 2.
Grading of hirsutism according to Ferriman- Gallaways scoring system

Grade	Score	No.of patient	Percentage
Mild	<10	13	26%
Moderate	11-20	30	60%
Severe	20-30	7	14%

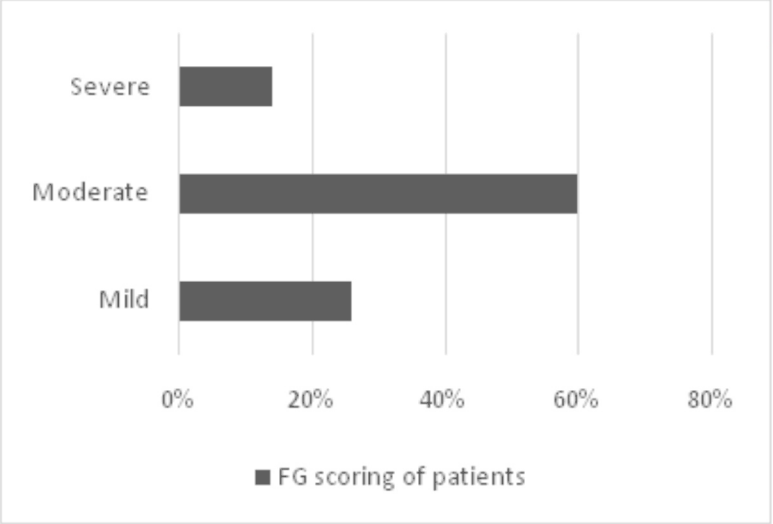


Table No. 3.
Analysis of hormonal assays, polycystic ovaries and hirsutism:

RaisedTestosterone	Low FSH & LH	High FSH & LH	High FSH & normal LH	Raised Prolactin	P.C.O.D.	Non-P.C.O.D	No Report	Total
17	11	4	4	4	29 (58%)	12 (24%)	9 (18%)	50

DISCUSSION:

Skin is an organ of communication and hair is a part of the language used. That is why change in the distribution of hair can dominate personality. Hair is an essential part of our self-image and the image others have of us. Hirsutism, the presence of unwanted hair in the female is a common clinical problem which causes great distress to the patient. Surprisingly in the series of 50 patients, studied by us, only six (12%) patients presented with hirsutism were young un-married girls, worried about their physical complexion. Secondly, the cohort of patients studied does not represent the whole population, as the study was conducted in the outpatient department of Gynecology and many of the patients seen at medical, skin O.P.D, private clinics and beauty parlors were not included in the study. These patients belonging to the lower socio-economic class, they were poorly educated, so they were not worried about their physical appearance. Third factor may be the arranged marriages in our set up. So hirsutism may not be the leading problem of the hirsute women, because fiances do not see the girl before marriage.

Duration of hirsutism is an important factor to know about the severity of disease, because acute onset with rapid progression signifies some serious disease like various tumors, but slow onset with prolonged duration shows the benign nature of the condition. Idiopathic hirsutism appears in teens or early 20s, whereas sudden onset of hirsutism in perimenopause women suggests ovarian neoplasm [15]. In our study we had only 4 (8%) out 50 patients having duration less than 1 year. 21 (44%) patients have duration more than 5 years.

Infertility has a definite association with hirsutism. Out of the total 50 hirsute women, 35 (70%)patients complained of infertility. 24 (48%) were cases of Primary Infertility and 11 (22%) were of Secondary Infertility. 13 patients had normal menstrual cycles and 22 had Oligomenorrhea.

Menstrual disturbances and hirsutism are frequently associated even in the presence of normal Luteinizing hormone/Follicle Stimulating Hormone ratio or normal sized ovaries [16]. 26 (52%) patients had menstrual disturbances along with the infertility. Majority of the patients (70%) were obese and polycystic ovarian disease was found in 29 (58%) of the patients. Hormonal assay was done in 38 patients. Testosterone levels were done in 38 patients out of whom 17 (14.7%) patients had raised levels.

Ferriman-Gallaways scoring was done in all the patients and majority of the patients (60%) had a moderate score between 11-20. 13 (26%) patients had mild hirsutism and 7 patients (14%) were graded in severe hirsutism who had Ferriman-Gallaways scoring above 20 and below 30. No patient showed evidence of virilism that is Clitoromegaly, Male Hair Pattern or Genital atrophy. Three patients had ovarian cysts which were removed by laparotomy.One of the cyst was chocolate cyst of endometriosis in an un-married girl who was later on put on Danazol.With infertility and some of others had either laparoscopy or ultrasound scan as a specific investigation.

CONCLUSION:

Incidence of the hirsutism could not be calculated and it is variable. It varies from community to community and depends upon various factors. The most important is the awareness about the disease; the other factors are poor education and low socio-economic status. Majority of patients fall into the idiopathic group, a substantial number have polycystic ovarian disease.

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