ISSN:0975-542X
Khawaja Tahir Mahmood et al / J Biomed Sci and Res., Vol 3 (1), 2011,347-352

Risk Factors Contributing to Hirsutism

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Abstract
Hirsutism refers to the growth of coarse, dark hair in areas where women typically grow fine hair or no hair at all. The condition is associated with increased (or normal) levels of circulating androgens (sex hormones) mostly testosterone. Aim of my study was to observe the factors responsible for abnormal growth of hairs .This was a retrospective study carried out in various hospitals of Lahore. A total of 30 patients were studied having Hirsutism. They were presented in Gynae out patient department of Sir Gangaram hospital, Services hospital, and lady Wallington hospital Lahore between the period of 16 June 2010 to 30 June 2010. Following were the major risk factors. About 53.33% patients develop Hirsutism due to polycystic ovary disease (PCOS) . In 60% of patients menstrual irregularities were observed . 43.33% patients show Hirsutism sign were having a family history of Hirsutism. 6.66% patients developed Hirsutism after Menopause. About 10% patients suffered from Hirsutism were with premature menarche. 20% women were overweight and 66.66% having a history of steroid and cosmetic use. Most of the women were having more than 1 factors which may be the cause of Hirsutism. Hirsutism itself is not a disease it is a symptom of other abnormalities. It has a vary bad social impact on women.

Key words; Hirsutism, Androgens, PCOS, Menopause, Premature menarche

INTRODUCTION

Hirsutism is a condition of increased hair growth in a woman associated with increased (or normal) levels of circulating androgens (sex hormones). Androgens are the steroids that help in development of masculine secondary sexual characteristics. Most important androgen is testosterone. The onset of these symptoms is usually gradual. Sudden onset of Hirsutism is often seen in adrenal tumors.

Hirsutism is a clinical condition commonly encountered in the practice of primary care medicine . The etiology and the age of the patient when it occurs vary widely . Hirsutism may appear in childhood as well as in older persons .Some drugs (oral contraceptives, L-thyroxine, danazol, and Diaz oxide), tobacco smoke, some syndromes (polycystic ovary syndrome, obesity, insulin resistance , hyperprolactinemia, hyperthecosis, congenital adrenal hyperplasia, and idiopathic), and some neoplasm (adrenal or ovarian) may lead to Hirsutism. [1]

Hirsutism can be regarded as a virilizing symptom and may be defined as a male type of body hair distribution in the female. The pathogenesis of hirsutism may be due to an increased androgen production or to an enhanced sensitivity of the hair follicles in sexual areas. The androgen production in the female depends upon direct secretion by the ovaries and the adrenals and upon peripheral conversion of androgen precursors. [2]

The most common cause of hirsutism is polycystic ovarian syndrome. Patients with "idiopathic" hirsutism have normal ovulatory cycles and androgen levels. Other causes are late onset congenital adrenal hyperplasia, Cushing's syndrome, and the HAIR-AN syndrome. Pituitary, ovarian, and adrenal tumors are important, but rare causes of hirsutism. A thorough history and examination are important. Laboratory investigation is essential in women with moderate to severe, sudden onset or rapidly progressing hirsutism. [3]

PCOS can be viewed as a heterogeneous androgen excess disorder with varying degrees of reproductive and metabolic abnormalities determined by the interaction of multiple genetic and environmental factors. Polycystic ovary syndrome (PCOS)

is also characterized by chronic an ovulation or infrequent ovulation, obesity, Hirsutism, hyperandrogenism and numerous follicular cysts in enlarged ovaries .[4]

Familial partial lipodystrophy, Dunnigan variety is a rare autosomal dominant disorder caused by missense mutations in LMNA gene. Individuals are predisposed to insulin resistance and its complications including features of polycystic ovarian syndrome. A 27 year-old Hispanic female presented with oligomenorrhea and hirsutism. Examination revealed Cushingoid facies, significant hirsutism, acanthosis nigricans, and a lean body habitués. [5]

Premature adrenarche refers to the early maturation of the adrenal zona reticularis such that the resultant modest hyperandrogenism causes the early appearance of pubic hair before the age of 8 years in girls and 9 years in boys. Patients with premature adrenarche had androgens that were much higher than what has been reported previously. [6]

Polycystic ovary syndrome (PCOS) is classically characterised by ovarian dysfunction (oligomenorrhoea, anovulation and infertility), androgen excess (hirsutism and acne), obesity, and morphological abnormalities of the ovaries (cystic enlargement and stromal expansion). [7]

The commonest cause of Hirsutism was Polycystic ovarian syndrome (PCOS) in 57.7%. Idiopathic Hirsutism was present in 22.6% and late onset congenital adrenal hyperplasia in 9.9% patients. Hyperprolactinemia and thyroid disorders were diagnosed in 4.2% respectively. One (1.4 %) patient had multiple etiologies. [8]

A 35-year-old woman with polycystic ovarian syndrome (PCOS) and insulin resistance developed severe hirsutism and virilization during pregnancy, which was the product of in vitro fertilization. Testosterone level was the highest. Postpartum, testosterone level returned to normal but the patient remained significantly more hirsute and virilized than before the pregnancy. [9]

Hypertrichosis is the term used for the growth of hair on any part of the body in excess of the amount usually present in persons of the same age, race, and sex, excluding androgen-induced hair growth. Excessive hair may cause cosmetic embarrassment, resulting in a significant emotional burden, particularly if extensive. [10]

Hirsutism appears in androgen dependent areas whereas Hypertrichosis can appear in any area. The bearded lady was most likely a victim of Hirsutism. Hirsutism comes in two primary types, Familial and Symptomatic. Familial hirsutism is hereditary, not a symptom of androgen problems. Symptomatic hirsutism is a symptom of an underlying problem such as hypersensitivity to or overproduction of androgens. There is little connection between Hirsutism and the thyroid gland, though Hirsutism can occur in cases of hypothyroidism .[11]

Hirsutism is a symptom or sign, which may have serious associations with cosmetic and psychological concern particularly if it develops well after puberty. Some medicines having androgenic activity may also cause this problem. A young unmarried girl who was given anabolic steroid for the treatment of dysmenorrhoea which resulted in Hirsutism. [12]

Causes of hirsutism in women include polycystic ovarian disease (PCOD), cushing's syndrome, adrenal cancer, certain medications, ovarian tumour, hypothyroidism or congenital adrenal hyperplasia.In some females, menses are seen to be regular. In such cases, the causes include genetic influence, premature menarche (time of onset of menses), pregnancy and menopause.

This study was to observe the factors responsible for abnormal growth of hairs . This was a retrospective study carried out in various hospitals of Lahore.

MATERIALS AND METHOD

Thirty patients with excessive and abnormal body hair growth who presented in out patient department of Lady willingdon Hospital, Lahore; Services hospital Lahore, Lahore and Sir Ganga Ram Hospital Lahore from 16 June 2010 to 30 June 2010 were studied. After detailed history including personal history, family history, menstrual history, medicine and cosmetic use history, clinical examination, labs test investigations, social history, dietary intake, any disease history, infertility, weight, were carried out. It was a retrospective study based on direct questioning to patient. For gathering data a questionnaire was developed which was filled by interviewing the patient.

RESULTS

Thirty patients were studied having hirsutism.

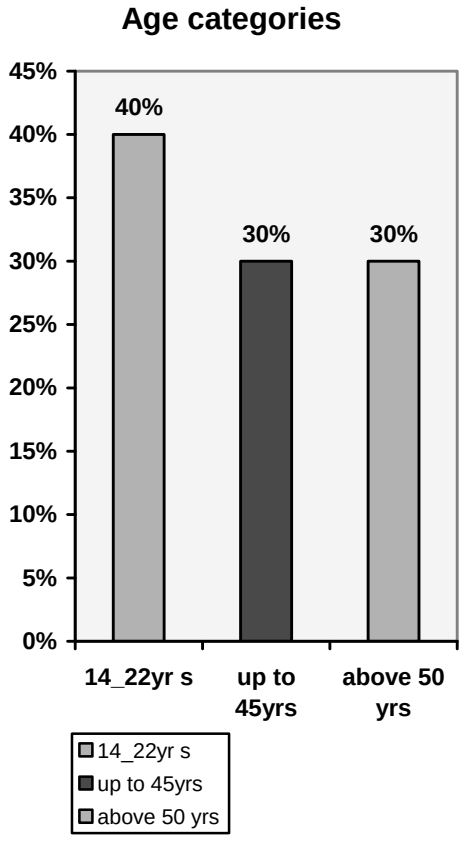

Figure 1: N=30

Age ranges for hirsutism is 40% between 14-22 year, 30% upto 45 years and 30% after 50 years .

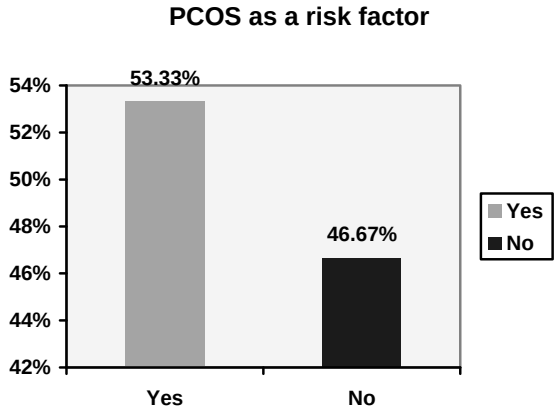

Figure 2:N=30

Major risk factors associated with Hirsutism is PCOS 53.33%.

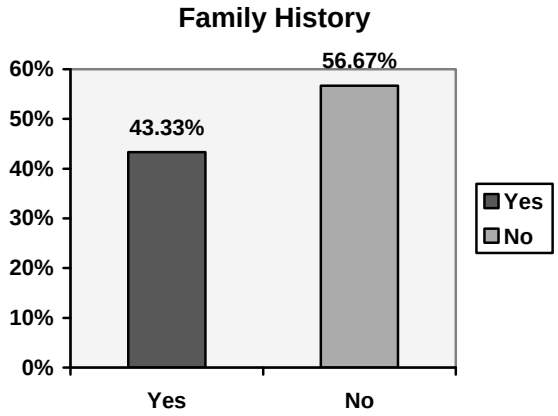

Figure 3: N=30

Family history for hirsutism is 43.33% patients.

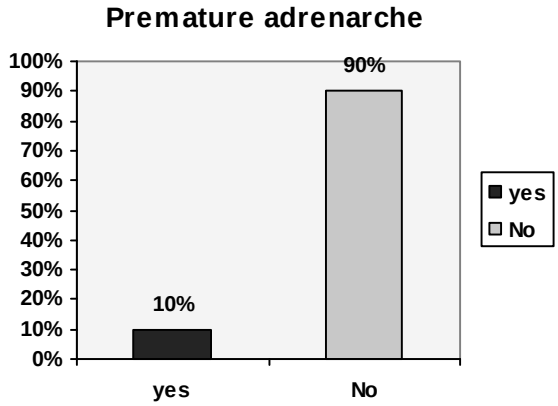

Figure 4 :N=30

Premature adrenarche was found in 10% patients.

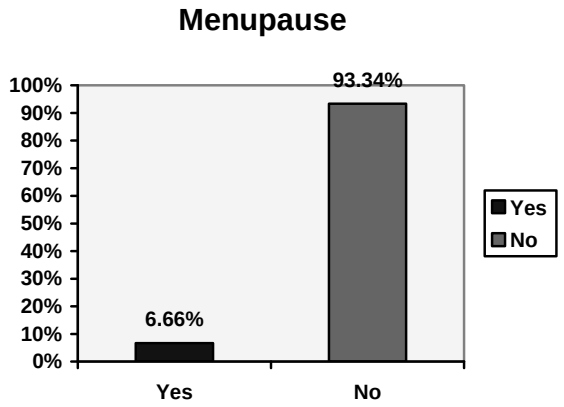

Figure 5: N=30
Women having hirsutism after menuppause were 6.66%.

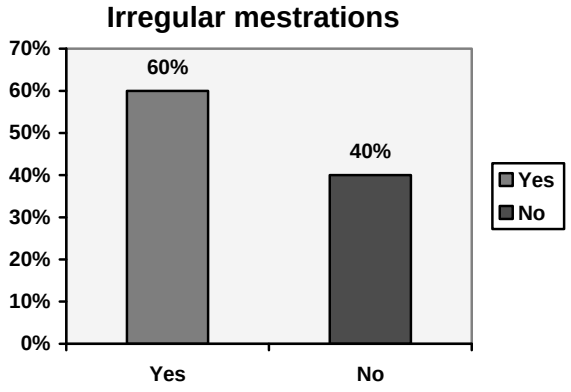

Figure 6: N=30
About 60% women were having irregular menstruation.

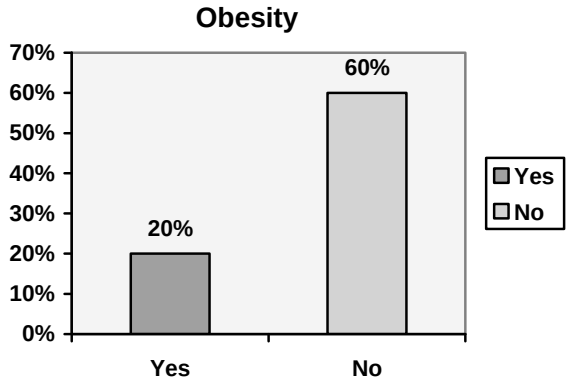

Figure 7: N=30
Women with overweight were 20%.

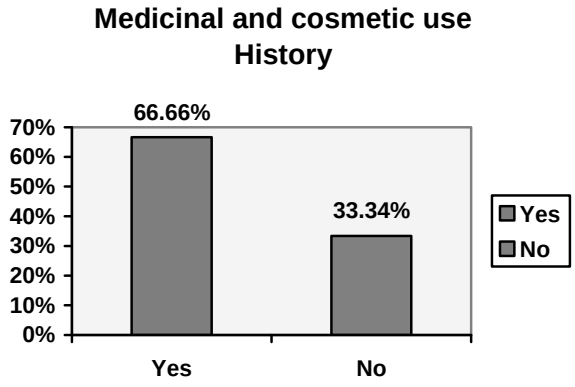

Figure 8: N=30
Women having medicinal and cosmetic use history were 66.66%.

DISCUSSION

Hirsutism refers to the growth of coarse, dark hair in areas where women typically grow fine hair or no hair at all - above the lip and on the chin, chest, abdomen, and back .The condition is associated with increased (or normal) levels of circulating androgens (sex hormones)mostly testosterone.

I study 30 patients. Incidence of Hirsutism is about 15% among population. There is a wide range of "normal" amounts of body hair among women. Race and ethnicity play a major role in the growth of body hair. As an example, Asian and Native American women tend to have little body hair, whereas Middle Eastern and Mediterranean women tend to have moderate to large amounts of body hair. Following were the major risk factors.

40% 0f women develop hirsutism at the age of 14-22 because adolescence occur and there are abrupt changes in hormonal levels, 30% during child bearing age and 30% after menopause.

The most common cause of hirsutism is polycystic ovarian syndrome. [3] About 53.33% patients develop hirsutism due to (polycystic ovary syndrome) PCOS. PCOS involves anovulation or ovulatory dysfunctions and androgen excess of unclear etiology. Elevated androgen levels increases risk of metabolic syndrome.

In 60% patient's hirsutism appear due to irregular menstruation. Irregular menstruation and amenorrhea are also among the leading causes of hirsutism. Women menstrual cycle consists of three phases; Follicular, Ovulatory and Luteal phase. Disturbances in levels of FSH, LH or Prolactin are main causes of menstrual irregulation.

Hirsutism comes in two primary types, Familial and Symptomatic. Familial hirsutism is hereditary, not a symptom of androgen problems. [11] 43.33% patients show family history of Hirsutism. These women tend to have normal amount of male hormones (testosterone).Problem is that their hair are more sensitive to small amount of male hormones so grow more quickly and thicker.

6.66% patients developed hirsutism after Menopause. Menopause is also a predisposing factor of hirsutism. Before and after menopause ovaries do not ovulate regularly and estrogen level drops. The continual androgen production leads to increase number of terminal hair.

Obesity which can greatly raise person insulin levels may be a causes of hirsutism. Insulin at higher concentration stimulates ovarian theca cells to produce androgens. There may also be effeigh levels of insulin to activate the insulin like growth factor 1 receptors in same cells. Again result in increase androgen production.20% of women were overweight.

About 10% patients suffered from hirsutism due to premature menarche.Premature menarche also promote hirsutism sometimes. Menarche is onset of 1st menstrual cycle in females. In premature menarche levels of dehydroepiandrosterone (DHEA) and dehydroepiandrosterone-sulfate (DHEAS) from adrenal glands occur earlier than typically seen in puberty. [6]

66.66%of womwen were having a history of steroid and cosmetic use. Hirsutism is a symptom or sign, which may have more serious associations than cosmetic and psychological concern alone, such as adrenal hyperplasia and ovarian tumor, particularly if it develops well after puberty. Some medicines having androgenic activity may also cause this problem. Here, we present a case of a young unmarried girl who was given anabolic steroid for the treatment of dysmenorrhoea which resulted in hirsutism. [12]

Increase or decrease in growth of hair is common during pregnancy. Many women experience some degree of hirsutism on face, limbs and back caused by endocrine changes during pregnancy. It is due to Transient androgen production by placenta or corpus leuteum. This hair should get normal with in 6 months after giving birth.

CONCLUSION

Most of the women were having more than one factors which may be the cause of Hirsutism. Major cause of Hirsutism were polycystic ovaries and genetic problems and other include premature adrenarche and menopause. Hirsutism itself is not a disease it is a symptom of other abnormalities. It has a vary bad social impact on women.

ACKNOWLEDGEMENT

We are very thankful to the vice chancellor of University, Professor Dr. Bushra Mateen and the registrar of University, Miss Shaista Wayne and the Head of Pharmacy Department, Dr. Hafeez . We also thank Services Hospital Lahore administration, Chief Pharmacists and to all doctors and nursing staffs.

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