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A CLINICO-EPIDEMOLOGICAL STUDY OF ACNE VULGARIS IN TERTIARY CARE HOSPITAL, SVIMS TIRUPATI

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ABSTRACT

Background: Acne vulgaris is the most common disease of the skin that affects both adolescents and adults most commonly adolescents. It is a chronic inflammatory dermatosis of pilosebaceous unit of the skin. The pilosebaceous follicle characterized by comedones, papules, pustules, nodules, cysts and scars. **Objective:** The objective of the study is to access the burden of the disease associated with Acne Vulgaris for all age groups & Provide an overview of the Epidemiology, Treatment options, adverse drug reaction monitoring for Acne in the study population of Tertiary care Hospital, SVIMS, Tirupati. **Materials and Methods:** A Hospital based prospective observational study was carried out by evaluating and assessing the clinical profiles of 100 patients who attended DVL OPD at Sri Padmavathi Medical College for Women, SVIMS, Tirupati over a period of 6 months form July 2019 to Dec 2019 were included in the study. Patients with multiple skin disorders and steroid induced acne were excluded. The response of the participants was recorded and analysed using SPSS Software. **Results:** In this study among 100 subjects, female (66%) were more affected with acne vulgaris compared to males (34%). Mean age group between 11- 20 years (Mean age 22.20± 6.721) with 49%. According to grading, grade II was the most prevalent (59%) followed by grade I (28%) followed by grade III (11%) followed by grade IV (2%). In this study face was the most common site involved. The most common aggravating factor was stress (93%).

Other aggravating factors are sun exposure (85%), dietary factors (80%), females with menstrual flare (21%), multiple drug use (18%), dandruff (9%), industrial exposure (2%), other factors (2%). In this study the commonly prescribed drugs are topicals (73%) followed by topical with oral therapy (27%) were prescribed. **Conclusion:** This study brings out the clinical profile of acne vulgaris in tertiary care hospital, SVIMS, Tirupati.

KEYWORDS: Acne Vulgaris, Pilosebaceous, erythamatous papules, pustules, nodules, scars, isoniazide, Benzoyl Peroxide.

INTRODUCTION

Acne Vulgaris is a chronic skin condition which involves inflammation of the pilosebaceous unit, the hair follicle & the sebaceous gland. It affects the areas where there are most sebaceous glands, that is the face, chest & upper back & shoulders. The sebaceous glands are involved in the development of the common adolescent skin disorder known as Acne Vulgaris. Acne occurs when the outlet from the gland to the surface of the skin is plugged, allowing sebum to accumulate in the follicle and sebaceous duct. The chemical breakdown of triglycerides in the sebum, possibly by bacterial action, releases free fatty acids, which in turn trigger an inflammatory reaction producing the typical lesions (pimples) of acne.

Acne Vulgaris is a chronic disorder of the pilosebaceous follicles of the skin. It is characterized by seborrhea, the formation of open & closed comedones, erythematous papules, & pustules and in more severe cases nodules, deep pustules & pseudocysts. Nearly 90% of teenagers have acne and half of them continue to experience symptoms as adults. By the age of 40 yrs. 1% of men & 5% of women still have lesions. Acne is considered as one of the most widespread skin diseases. It results in the development of severe consequences among the younger people and may result in depression & suicide in extreme disfiguration conditions. According to classification acne can be assigned in three characteristics like mid acne, moderate acne, severe acne. The pathophysiology of acne is multifactorial the major factors involved are: Increased sebum secretion, Abnormal follicular differentiation, Colonization of the intra follicular duct with Propionic bacterium acnes leads to Inflammation.

The etiology of acne vulgaris is multifactorial. Precipitating factors include genetics, exposure to industrial compounds, trauma, rubbing from tight clothing, cosmetics, emotional stress and unfavourable climate. The major factors involved in pathogenesis are an increased

sebum production, an abnormality of microbial flora, cornification of the pilosebaceous duct, production of inflammation and increased androgen levels. The most common aggravating factors of acne vulgaris are stress, past medication history, dietary factors, premenstrual flare, hormonal imbalance, psychological factors.

Prevalence rates of acne of age and 1996 census data estimated that 40- 50 million U.S. individuals have acne, with an 85% prevalence rate in those aged 12- 24 years. A study from the USA indicated that the prevalence by the mid- teens (15years- 17years) was virtually 100%. A study of adolescents in New Zealand identified acne in 91% of male & 79% of female students studied. Severe acne was noted in 6.9% of males and just 1.1% of females. A Population based study from Australia demonstrated that the overall prevalence rates were 36.1%, ranging from 27.7% in 10- 12 year old's to 93.3% in 16- 18 year old's.

In India, acne affects 80% of individuals between puberty and 30 years of age. It was also recorded in 54% of women and 40% of men over 25 years of age. Other studies have reported acne in 28-61% of school children in the age group 10-12 years; 79-95% in the age group 16-18 years; and even in children in the age group 10-12 years and a prevalence data from dermatology clinic in a teaching hospital in Varanasi reported acne in 50.6% of boys and 38.13% of girls in the age group 12-17 years.

According to a study in the Journal of the American Academy of Dermatology, Acne Vulgaris usually begins during puberty, but often extends into the twenties, thirties & beyond. It can appear all over the body, but is most common on the face, neck, chest & back. The types of lesions that are commonly seen in acne vulgaris are two types of comedones both closed and open comedones. Closed comedones known as whiteheads, open comedones known as blackheads. Other lesions involves Papules, pustules, nodules, cysts and scars.

Grading system was classified according to mild, moderate, severe and cystic acne. Grading system classified to grade 1, it was non inflammatory containing less than 20 comedones, grade II, contains few comedones with greater than 10 pustules and 1- 2 pustules, grade III, contains more comedones with papules and 5- 10 pustules and nodules, grade IV, contains comedones with papules, pustules, more than 5 nodules with cyst forming and wide spreading of scars. Lesions of acne mostly seen in the face, then followed by back, shoulders and regions of the neck, this is because of sebaceous glands are mostly present in the regions of the face.

Acne vulgaris was diagnosed by examining the lesions present in the body. Acne lesions are ranging from non inflammatory (open or closed comedones) to inflammatory lesions (papules, pustules and nodules). Scales used in grading the severity of acne vulgaris are pills burry scale, cook's acne grading scale and leeds acne grading technique. Acne vulgaris diagnosis was easily made based on clinical basis and without laboratory evaluation. Through hormonal evaluation and microbiological testing also acne vulgaris will be diagnosed.

The most common treatment for acne vulgaris is topical therapy and oral therapy, mostly topical therapy was prescribed by the physicians. In topical therapy, topical retinoids and topical antibiotics are involved. In oral therapy, oral antibiotics, antisebum agents, oral contraceptives and oral corticosteroids are involved. From past years onwards simple procedures are used in the treatment of acne vulgaris such as comedo extraction and intralesional steroid injections. Now a times latest procedures are used to treat acne vulgaris they are microdermabrasion, chemical peels, intralesional steroid injections, extraction, light and laser therapy which includes pulsed dye laser, potassium titanyl phosphate laser, 1450-NM laser, photodynamic therapy, radio frequency, photo pneumatic therapy.

MATERIALS AND METHODS

The study includes the assessment of clinical profile of patients suffering with acne vulgaris, assessment of prescription patterns and monitoring and reporting of adverse drug reactions. This is a hospital based prospective observational study.

We conducted our study in Department of Dermatology, Venereology & Leprosy, Sri Venkateswara Institute Of Medical Sciences, Tirupati, Andhra Pradesh, India.

Duration of study was 6 months from July 2019 to December 2019.

The study was carried out with prior approval from the Institutional ethics committee, Sri Venkateswara Institute of Medical Sciences, Tirupati.

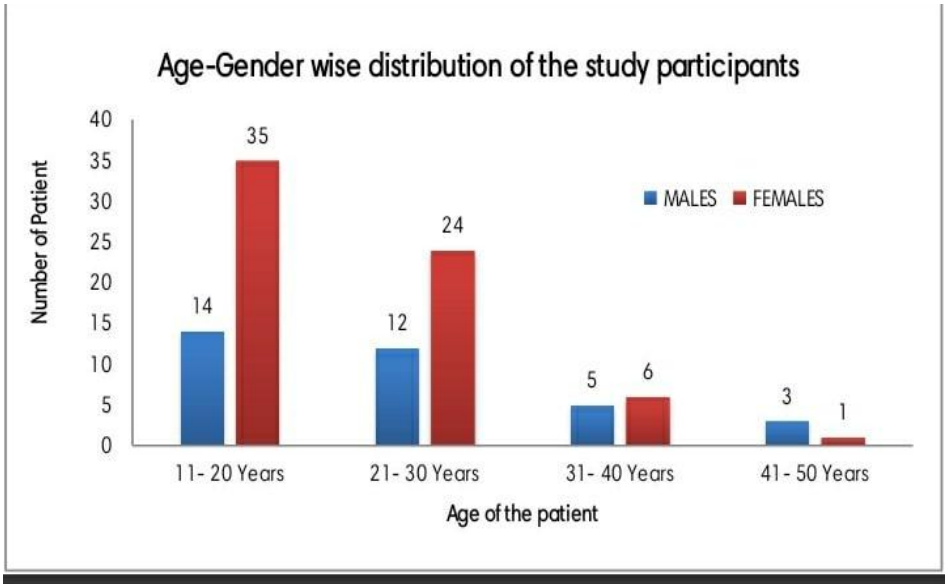
100 subjects were taken for conducting the study

Study criteria involves inclusion criteria and exclusion criteria. In inclusion criteria patient with all age groups, patient willing to participate in the study and acne vulgaris patient with all the grades are involved. In exclusion criteria, Patients unwilling to participate in the study, steroids induced acne vulgaris, multiple skin disorders and drug induced acne are excluded.

RESULTS

A total 100 cases were analysed in this prospective study conducted for 6 months. Among 100 patients, 34 (34%) were males and 66 (66%) were females, in this gender wise distribution of study females are more affected with acne vulgaris compared to males.

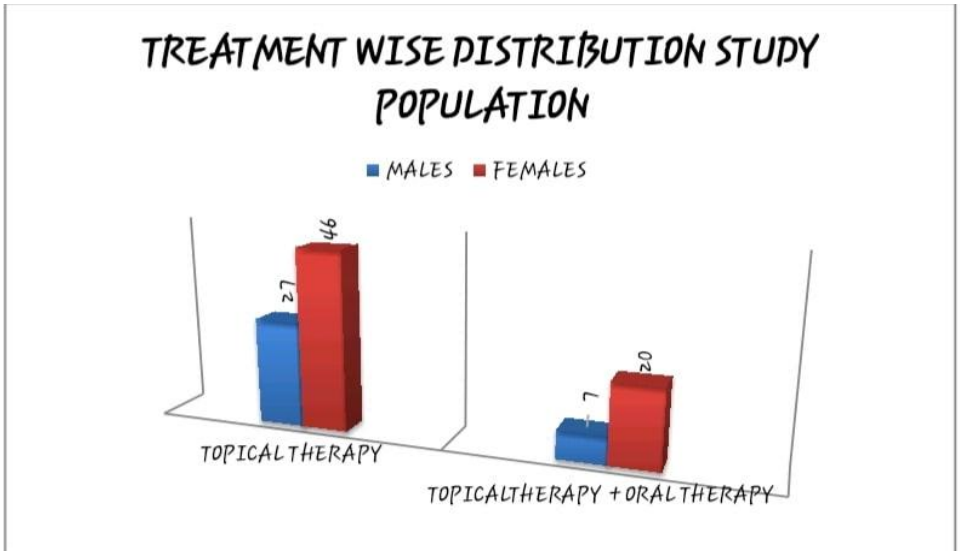
In the present study maximum number of patients belonged to the age group 11- 20 years with 49 (49%), are more affected by acne vulgaris, followed by 21-30 years with 36 (36%), followed by 31- 40 years with 11 (11%), followed by 41- 50 years with 4(4%) patients are affected by acne vulgaris in age wise distribution.



According to grading system, 59 (59%) patients had grade II acne followed by 28 (28%) patients had grade I acne followed by 11(11%) patients had grade III acne followed by 2 (2%) patients affected with grade IV acne. 58 (58%) patients had acne lesions only one the face followed by face and trunk region 15 (15%) then face and arms 5(5%). Stress (93%) is the main triggering factor that causes acne vulgaris followed by sun exposure (85%) followed by dietary factors 80 (80%) followed by premenstrual flare for females (21%) followed by dandruff 9 (9%). In our study 73 (73%) patients were treated with topical therapy and 27(27%) patients were treated with oral therapy along with topical therapy.

Regarding location sites of acne vulgaris, face was the most common site involved (58%), followed by face and trunk together (15%), followed by face, arms and trunk involved (6%), followed by face and arms (5%) followed by face and chest together (4%) followed by trunk (3%) followed by face, arms, chest (front) involved (2%).

In this prospective study we included the triggering factors like drugs, stress, sun exposure, industrial exposure, premenstrual flare, lactation, pregnancy, dietary factors, dandruff & other factors. In our study of 100 patients each effected with one or more factors that causes acne vulgaris. 18% patients are with drug factor in that 8% males & 10%females. Followed by 93% stress factor in that 38% males & 55% females, the patients with sun exposure 77% in this 30% males & 47% females, the patients with industrial exposure 2% of males, the patients with premenstrual flare were 21% females, patients with dandruff were 9% in this 3% males & 6% females, the patients with dietary factors 80% in that 36% males & 44% females and other factors includes 2% male patients.



The treatment plan of acne vulgaris patients is given in topical therapy and oral + topical therapy. In our study of 100 patients, topical therapy is given to 72% patients & oral + topical therapy is given to 28% patients. The prescribed treatment includes oral antibiotics, topical antibiotics, oral retinoids, topical retinoids, sunscreens, moisturizers, anti-acne bars, anti acne foaming face wash, cleansing lotion and other topical.

ADR (Advers drug reaction) Reporting

In this study of 100 patients, 3 patients were presented with ADRs during study period, in this 3 females patients are effected with ADR.

A 17 years aged female patient with known grade-II acne vulgaris came with burning sensation over face on usage of adapalene + benzoyl peroxide gel. Adapalene + benzoyl peroxide is replaced with, benzoyl peroxide -5% gel

A 16 years aged female patient with known grade-I acne vulgaris came with burning sensation over face on improper usage of benzoyl peroxide-2.5% gel. Benzoyl peroxide-2.5% is replaced with tretinoin-0.025%.

A 15 years aged female patient with known grade-I acne vulgaris came with irritant dermatitis on usage of tretinoin-0.025% cream. Tretinoin-0.025% is replaced with benzoyl peroxide-2.5%gel

Before acne

After adr irritant dermatitis

DISCUSSION

Adolescence is time of physical, emotional, and social development. Acne is a common A adolescent problem, affecting more than 85% of teenagers, as well as some adults.[18] A survey at Department of DVL at Basaveswar Teaching & General Hospital, Gulberga. Reported that among 120 patients, maximum number of patients belonged to the age group 16- 20 years with 61 (51%), followed by 11-15 years with 25 (21%) patients affected with Acne Vulgaris. Pandey et.al. studied out of 300 patients, grade II acne was the most prevalent

one (36%) followed by grade III (27%). In the study by Adityan et.al, grade I acne was the most prevalent (60. 2%), grade II (27. 5%) followed by grade III (2.6%) followed by grade IV (9.7%). A survey of Dermatology OPD of a Narayan medical college, Bihar. Reported that out of 15, 322 patients, 429 patients were diagnosed with acne. In the study face was involved in all the patients of acne vulgaris(100%) , back in 25.6%, arms in 19.3%, chest in 17.5% & neck 7. 5% where as only face involvement was seen in 67.1%. According to a population based study by Kilkennny et.al. (Australia), the overall prevalence rate of acne 36.1% ranging from 27.7 % & in 10- 12 yr old to 93.3% in 16- 18 years old.

In our present study among 100 patients, females (66%) were more affected with acne vulgaris compared to males (34%). Maximum number of patients belonged to the age group 11- 20 years with 49 (49%). The mean age was 22.20 and the minimum and maximum aged were between 11- 48 years. According to grading, grade II was the most prevalent (59%) followed by grade I (28%) followed by grade III (11%) followed by grade IV (2%). In the present sstudy face (58%) was most common site involved and remaining were involved with multiple sites. The most common aggravating factor involved in the present study was stress (93%) followed by sun exposure (85%), females with premenstrual flare (21%), Dietary factors (80%), with drug use (18%), dandruff (9%), industrial exposure (2%) and other factors were 2%.

sprescription pattern of dosage form is with 73% of topicals and 27% topical and oral therapy were prescribed. Limitations of the study includes majority of patients were not attended for follow up and no patient had a surgical treatment.

CONCLUSION

The present study was focussed on assessing and monitoring of clinical profiles, treatment options and adverse drug reactions in patients with acne vulgaris. More number of female patients attended the out patient department of DVL for acne vulgaris treatment. Females (66%) are more affected with acne vulgaris compared to males (34%). Face is the most common site that affect with acne vulgaris. 93% patients were complained with stress, sun exposure of 85%, dietary factors with 80%. More number of patients were prescribed with topical therapy (73%). Clindamycin and Benzoyl peroxide are common topicals prescribed for acne vulgaris. 90% of patients had a good result on the prescribed medications

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