

## PERCEPTION OF ACNE PATIENTS REGARDING ITS PATHOGENESIS AND TREATMENT

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### ABSTRACT

**Background:** Acne vulgaris is the most common skin disease treated by dermatologists. Misconceptions about acne, regarding its causes, treatment options and their possible outcome are widespread. **Objectives:** The objective of this study was; to evaluate the knowledge and perception of acne patients regarding their understanding of acne pathogenesis, treatment options, and expectations. **Patients and methods:** This descriptive study was conducted in dermatology clinic, outpatient department of Sheikh Zayed Medical College / Hospital, from 1<sup>st</sup> January to 15<sup>th</sup> April, 2010 and a total of 105 consecutive study subjects, who were diagnosed with acne were included. An informed verbal consent was ensured from every study subject. **Results:** The mean age of the patients was  $18.8 \pm 2.7$  years. Majority of the patients (87%) were females and unmarried (83 %). 74% had education level matric and above. 48.6% belonged to urban areas, 30.4% to rural areas and 21% to urban slums. 67% of the patients of acne in our study reported that they felt frequently worried about their acne. 55 % of the study subjects had duration of acne less than three months, 41 % had duration between 3 to 12 months and 4% had duration more than one year. When asked about causes of acne, 35% related it with poor skin hygienic conditions, 19% to dietary factors, 13% to blocked skin pores, 10.5 % to inheritance factors, 7.6% to stress, 6.7% related to infection by germs. Regarding dietary aggravating factors; 38 % linked to oily food items, 14 % with tea, 13.3% with milk products. 17 % perceived that acne is not a curable disease. 41 % of the patients had no opinion about mode of treatment. 67% of the patients expected the duration of acne treatment may be up to 3 months. **Conclusion:** There is a need for accessible, accurate, community-based education on the natural history of acne, its pathogenesis, risk of sequelae, the effectiveness and expected duration of treatment, and the importance of prompt medical attention.

**Keywords:** Acne vulgaris, pimples, dermatological diseases.

### INTRODUCTION

Acne vulgaris is the most common skin disease treated by dermatologists, affecting 85% of the population at some time in their life.<sup>1</sup> Its major complications include physical scarring and psychosocial effects, which may persist long after the active lesions have disappeared.<sup>2</sup> Although it is widely believed that factors such as stress and anxiety may not only be a result of acne but can themselves exacerbate acne.<sup>3,4</sup> Increased number of studies support the pathogenic link between chronic stress and exacerbation of disease. Research shows that stress significantly slows wound healing, increases pain intensity, and slows surgery recovery rates.<sup>5,6</sup> Evidence that psychological stress may influence the course of dermatological disease is also growing, especially in the settings of psoriasis, alopecia areata, and atopic dermatitis.<sup>7,8</sup>

Considering the pathogenesis of disease, it is noted that seborrhea, follicular hyperkeratosis, propionibacteria, and inflammatory reactions are the most important factors leading to acne.<sup>7</sup> The combination of increased sebum production and follicular hyperkeratosis facilitates an increased growth of *Propionibacterium acnes*. Its metabolic products lead to follicular inflammation and, in extreme cases, even to perifollicular abscesses. Sebum production is influenced by androgens, so that abnormalities in androgen levels can produce seborrhea and acne. Follicular hyperkeratosis may be triggered by a relative deficiency in linoleic acid, peroxides from sebum components, and especially by inflammatory mediators such as interleukin-1. Bacterial metabolic products such as lipases, proteases, or chemotactic factors lead to the perifollicular inflammation. This inflammation is not only a response to other pathogenetic factors, but also a cause of acne. An initial mild perifollicular inflammation can induce comedogenesis via a variety of mediators.<sup>9,10</sup> The influence of dietary factors on the initiation and course of acne has recently received increased recognition. A connection has been postulated between acne and nutrients with glycemic index, as well as with milk products.<sup>10,11</sup> Another study has revealed that high glycemic load diets may exacerbate acne. Dairy products appear to be weakly associated with acne, and the role of omega-3 fatty acids, antioxidants,

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zinc, vitamin A, and dietary fiber remains to be elucidated.<sup>12,13</sup> The major classes of therapeutic agents are topical and systemic retinoids, antimicrobial agents, and systemic hormonal drugs. Combination therapy with a topical retinoid and an antibiotic can normalize follicular epithelial desquamation and reduce bacterial proliferation. The new retinoids (e.g adapalene) have an additional anti-inflammatory action along with their effect on the preclinical microcomedo and, coadministered with a topical or an oral antibiotic, are a rational initial therapy for all but the most severe forms of acne. Retinoids can also be used alone for long-term maintenance to prevent the reemergence of comedones and inflammatory acne lesions and to spare the use of antibiotics, thus helping to reduce the risk of bacterial resistance.<sup>14,15</sup>

Misconceptions about acne regarding its pathogenesis, causes and treatment options and their possible outcome are widespread and enduring among our under-graduate medical students.<sup>16,17</sup> In a study, it was shown that, the patients with acne have opinion that acne has affected their quality of life and it directly corresponds to the disease severity. The effect of acne vulgaris on quality of life was significantly higher in patients younger than 20 years.<sup>18</sup> There is a paucity of information on the knowledge and understanding of patients with acne about their condition. The objective of this study was to evaluate the knowledge and perception of acne patients regarding their understanding of acne pathogenesis, treatment options, and expectations.

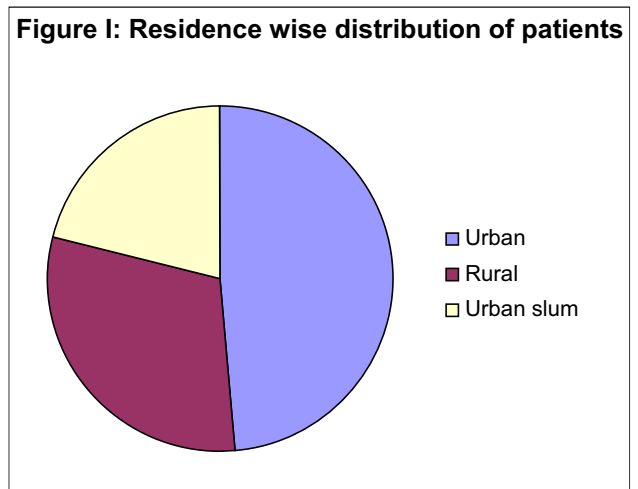
## PATIENTS AND METHODS

This descriptive study was conducted in dermatology clinic, outpatient department of Sheikh Zayed Medical College / Hospital, from 1<sup>st</sup> January to 15<sup>th</sup> April 2010 and a total of 105 consecutive study subjects, who were diagnosed with acne were included in study. An informed verbal consent was ensured from every study subject. Those who had not given consent were excluded from study. A questionnaire having detailed information on demographic variables, knowledge about acne, its treatment and expectations about different treatment options was filled by trained data collectors. Data was entered in SPSS version 16. Numerical variables were

calculated as mean and standard deviation, whereas, categorical variables were taken as percentages and frequencies.

## RESULTS

This study included a total of 105 young patients, who came for treatment of their acne. The mean age of patients was  $18.8 \pm 2.7$  years, majority of the patients (87%) were females and unmarried (83%). Similarly, majority of the patients were students (76%) with 74% having education level matric and above. 48.6% belonged to urban areas, 30.4% to rural areas and 21% belonged to urban slums (Figure I). 67% of the patients of acne in our study reported that they felt frequently worried about their acne.



It was noted that, 55.2 % of the study subjects had duration of acne less than three months, 41% had duration of acne between 3 to 12 months, 4% had duration of acne more than one year. However, 49.4 % of the study subjects had not previously consulted any doctor for their treatment, 44.8 % had consulted doctor/ consultant previously for treatment but with no relief of the condition, whereas, 5.8% had already got treatment from medical store, dispenser/attendants having no relief from condition.

**Table. I: Perceived causes of acne**

Factors	Frequency	Percent
Poor skin hygiene	37	35.2
Diet	20	19.0
Blocked skin pores	14	13.3
Inheritance	11	10.5
Stress	8	7.6
Infection by germs	7	6.7
Drugs	4	3.8
Obesity	3	2.9
Evil spirits	1	1.0
<b>Total</b>	<b>105</b>	<b>100.0</b>

When asked about causes of acne, 35.2% related it with poor skin hygienic conditions, 19% related dietary factors as a causative agent, 13.3% had related blocked skin pores, 10.5 % related inheritance factors, 7.6% related to stress, 6.7% related infection by germs, as causative factors for acne. (Table. I).

**Table II: Perceived dietary factors aggravating acne**

Factors	Frequency	Percent
Oily items	40	38.01
No opinion	25	23.82
Tea	15	14.29
Milk products	14	13.36
Coffee	7	6.69
Alcohol	3	2.88
Barbeque	1	0.95
<b>Total</b>	<b>105</b>	<b>100.0</b>

In our study, we found that majority of patients answered that the aggravating factors for acne include; oily food items (38.1%), tea (14.3%), milk products (13.3%), as aggravating factor for acne.(Table.II). Regarding mode of treatment,

41% of the patients had no opinion about mode of treatment whereas, 23% perceived that medicated soap may be used for treatment, 9.5% had perception that medicines can be used for treatment of acne. Regarding expected duration of acne treatment, 67% of the patients expected the duration of acne treatment may be upto 3 months, 16.2% expected it to be upto 6 months, whereas, 17 % expected it to be more than 6 months.

## DISCUSSION

This study was conducted to assess knowledge of acne patients regarding acne pathogenesis, treatment options, and expectations, a total of 105 young patients who attended outdoor room in Sheikh Zayed Medical College/Hospital, Rahim Yar Khan for treatment of their acne. Patients in our study were mainly young, unmarried girls and students. These findings of being young aged females correlate with other studies findings.<sup>2,3</sup>

Misconceptions exist in the community regarding factors that exacerbate and cause acne. In particular stress, diet, lifestyle and personal hygiene are often claimed to be important factors. In a study, involving medical students, with respect to exacerbating factors for acne, 67% of students identified stress, 10% lifestyle factors (smoking and alcohol consumption), and 25% claimed poor facial hygiene exacerbated acne. Diet was stated to be an important factor by 41% of students, of whom 12% specifically mentioned chocolate.<sup>3</sup> In our study, we found that majority of patients answered that the aggravating factors for acne include; oily food items (38%), tea (14%), milk products (13%), as aggravating factor for acne (Table.II). In our study, we have categorized aggravating factors and causative factors separately and so when asked about causes of acne, 35.2% related it with poor skin hygienic conditions, 19% related dietary factors as a causative agent, 13.3% has related blocked skin pores, 10.5 % related inheritance factors, 7.6% related to stress, 6.7% related infection by germs, as causative factors for acne(Table. I). In another study, acne was most often believed to be caused by hormonal and genetic factors, although diet, poor skin hygiene, and infection were also implicated.<sup>19</sup> Despite the prevalence of this condition and considerable research, there is still much unsubstantiated myth-surrounding the causes of acne. Specifically, stress is often cited as playing a role in acne flares, even

though there is little research to support this claim. Although it is well-known that acne can be a source of significant stress and anxiety.<sup>5</sup> Our study has shown that only 7.6% related stress as a causative factor. Acne is a common disease with an underlying hormonal basis; a study was conducted by Steven Stoll et al, to determine the ways in which the different stages of the menstrual cycle affect acne in women. They concluded that almost half of all women experience premenstrual flares of their acne. Premenstrual flares may be more common in older women.<sup>20</sup>

We found that, 55.2 % of the study subjects had duration of acne less than three months, 41 % has duration of acne between 3 to 12 months, and 3.8 % had duration of acne more than one year. However, 49.4 % of the study subjects had not consulted any doctor for their treatment, 44.8 % had consulted doctor/consultant previously for treatment but with no relief of the condition, whereas, 5.8% had already got treatment from medical store dispenser/attendants having no relief from condition. A previous study had showed that seventy-four percent of patients waited more than 1 year before seeking medical attention for acne and acne was believed to be curable by 49% of patients with an anticipated treatment duration of less than 6 months.<sup>19</sup> Our study had shown that belief about the curability of acne was better among study subjects, where, 80 % of the study subjects had opinion that pimples can be cured by some treatment, as compared to 17 % who perceived that it is not a curable disease, 3 % had no opinion about its prognosis. Similarly, expected duration of acne treatment, was considered less as compared to the above mentioned study, where 67% of the patients expected the duration of acne treatment may be upto 3 months, 16.2% expected it to be upto 6 months, whereas, 17 % expected it to be more than 6 months.

The major classes of therapeutic agents for acne are topical and systemic retinoids, antimicrobial agents, and systemic hormonal drugs. Combination therapy with a topical retinoid and an antibiotic can normalize follicular epithelial desquamation and reduce bacterial proliferation. The new retinoids (eg, adapalene) have an additional antiinflammatory action along with their effect on the preclinical microcomedo and, coadministered with a topical or an oral antibiotic,

are a rational initial therapy for all but the most severe forms of acne. Retinoids can also be used alone for long-term maintenance to prevent the reemergence of comedones and inflammatory acne lesions and to spare the use of antibiotics, thus helping to reduce the risk of bacterial resistance.<sup>14</sup> In our study, regarding mode of treatment, 41 % of the patients had no opinion about mode of treatment whereas, 23% had perception that medicated soap may be used for treatment, 9.5% had perceptions that medicines can be used for treatment of acne. Table. I

## CONCLUSION

There is a need for accessible, accurate, community-based education on the natural history of acne pathogenesis, risk of sequelae, the effectiveness and expected duration of treatment, and the importance of prompt medical attention.

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**Prophet Mohammed (صلى الله عليه وآله وسلم) Said:**

**“The rights of women are sacred. See that women are maintained in the rights assigned to them.”**