Original Article

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Exploring the Safety and Efficacy of Physical Extraction in the Treatment of Acne Vulgaris: A Hospital-Based Study

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ABSTRACT

Background: *Acne is a common inflammatory skin disease which affects the pilosebaceous units of the skin. It can have severe psychological effects and can leave the patient with severe skin scarring. In this study physical therapies of acne treatment like come done, extraction, cryoslush therapy, cryotherapy, electrocauterization, intralesional corticosteroids and optical treatments the safety and efficacy of comedone extraction with incision and drainage in nodulo cystic acne are mentioned.*

Materials and methods: *A descriptive study was conducted at Lab Aid Diagnostic Ltd, Jashore, from January to June 2024. A total of 200 respondents were included in the study. Data were collected through structured interviews and medical record reviews.*

Results: *The overall proportion of Acne Vulgaris among rural male 52.5% and female were 47.5%. The proportion is varied by the age group, 31% in aged 11-15 years, 35% in aged 16-20 years, 12.5% in aged 21-25 years, 7.5% in aged 26-30 years, 6.5% in aged 31-35 years and rest 7.5% aged >35 years. About the educational status, 1.5% completed primary level, 31% completed secondary level, 35% higher secondary level and rest 32.5% completed graduation. According to occupational status, 32.5% were employed and 67.5% were unemployed. Among 200 respondents, 25% were from low socio-economic status, 35% from middle income family and 40% from high income status. According to nutritional status 20%, were underweight (BMI < 18.5), 45% had Normal weight (BMI 18.5-24.9) and 35% overweight (BMI ≥ 25). Association between duration of complete cure and grades of acne vulgaris after only physical extraction like Comedon extraction and incision and drainage in nodulo-cystic acne shows significant association (P < 0.0006). The association between Gender and grades of acne vulgaris shows significant association (P< 0.0028). Association between socioeconomic status and grades of acne vulgaris shows significant association (P< 0.05).*

Conclusion: *This study highlights the safety and efficacy of comedone extraction with incision and drainage in nodulo cystic acne without any scarring and short period of time was taken for complete cure.*

Key words: Acne vulgaris; Chronic inflammatory skin disease; Severe skin scarring.

Introduction

Acne vulgaris is a common chronic inflammatory disease of the skin. It is found in about 80% of young adults and adolescents.[1-4] In recent years, acne has been observed in younger patients due to the earlier onset of puberty.[5] Acne is more common in girls in the age range of 12 years and younger, but it presents more in boys in the age range of 15 years or older.[6] Acne has many negative effects on young adolescents. It causes discomfort, emotional stress, disfigurement and even permanent scarring to the skin. It may also cause anxiety and embarrassment in patients and may diminish the patient's physiological and social wellbeing.[7,8]

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Materials and methods

The hospital-based descriptive study was conducted at Lab Aid Diagnostic Ltd, Jashore, from January to June 2024. The research aimed to explore the safety and efficacy of physical extraction in treatment of Acne Vulgaris. A total of 200 respondents were included in the study. Data collection involved structured interviews and medical record reviews. Interviews were conducted directly from the participants to gather socio-

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demographic information. While A structured questionnaire was used to collect data on variables including age, education, occupation, socio-economic status, nutritional status. Acne presents as a variety of polymorphic lesions from grade 1 to grade 4, starting with comedones, as listed below: Grade 1: Also known as "comedones," and is categorized into two types, open and closed. Open comedones form when the pilosebaceous orifice becomes plugged with sebum and appears as papules with a central, dilated follicular orifice containing gray, brown or black keratotic material. On the other hand, closed comedones form when keratin and sebum block the pilosebaceous orifice beneath the skin surface. They appear as dome-shaped, smooth papules that can be skin-colored, whitish or grayish in appearance. Grade 2: Inflammatory lesions present as a small papule with erythema. Grade 3: Pustules. Grade 4: Many pustules coalesce to form nodules and cysts called nodulocystic acne.[9]

Results

Table I Sociodemographic Characteristics of the respondents (n=200)

Variable	Frequency (n)	Percentage (%)
Total respondent	200	
Gender		
Female	95	47.5
Male	105	52.5
Age Group		
11-15 years	62	31
16-20 years	70	35
21-25 years	25	12.5
26- 30 years	15	7.5
31- 35 years	13	6.5
>35 years	15	7.5
Education		
Primary	3	1.5
Secondary	62	31
Higher Secondary	70	35
Graduate	65	32.5
Occupation		
Employed	65	32.5
Unemployed	135	67.5
Socio-Economic Status		
Low	50	25
Middle	70	35
High	80	40
Nutritional Status (BMI)		
Underweight (BMI < 18.5)	40	20
Normal weight (BMI 18.5-24.9)	90	45
Overweight/Obese (BMI ≥ 25)	70	35

Among respondents, considering age majority 70(35%) were of 16-20 years. 52.5% were male and female 47.5% Among all respondent educational status 1.5% completed primary level, 31% completed secondary level, 35% higher secondary level and rest 32.5% completed graduation. According to occupational status, 32.5% were employed and 67.5% were unemployed. Among 200 respondent, 25% from low economic status, 35% from middle income family and 40% from high income status. According to nutritional status, 20% were Underweight (BMI < 18.5), 45% from Normal weight (BMI 18.5-24.9) and rest 35% found as Overweight (BMI ≥ 25).

Table II Association between duration of complete cure and grades of acne vulgaris after only physical extraction (n=200)

Duration of Complete Cure	Grade- 1	Grade- 2	Grade-3	Grade-4	df	χ^2	p value
3 weeks	35	25	25	5	9	29.2019	0.0006
4 weeks	33	20	7	6			
5 weeks	8	5	5	6			
6 weeks	5	5	5	5			

Table II describes the association between duration of complete cure and grades of acne vulgaris after only physical extraction like Comedon extraction and incision, drainage in nodulo-cystic acne shows significant association (p 0.0006).

Table III Acne vulgaris among males and females (n=200)

Gender	Grade- 1	Grade- 2	Grade- 3	Grade- 4	df	χ^2	p value
Male	25	35	25	20	3	14.0718	0.0028
Female	40	20	10	25			

The table narrated the association between Gender and grades of acne vulgaris variation was observed in acne vulgaris occurrence, significant association (p 0.0028).

Table IV Association between grades of acne vulgaris with socioeconomic status (n=200)

Socioeconomic status	Grade- 1	Grade- 2	Grade- 3	Grade- 4	df	χ^2	p value
Low	15	15	10	10	6	12.4459	0.05
Middle	15	15	15	25			
High	25	25	20	10			

Above table depicts the association between socioeconomic status and grades of acne vulgaris, shows significant association (p < 0.05).

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Discussion

The findings of this hospital-based study provide valuable insights into the safety and efficacy of only physical extraction like Comedon extraction, incision and drainage in nodulo-cystic acne. With an overall occurrence among rural men 52.5% and female 47.5%. In this study, association between Gender and grades of acne vulgaris reflected significant association (p 0.0028). Acne is more common in girls in the age range of 12 years and younger, but it presents more in boys in the age range of 15 years or older.[6] Adolescent acne is more common in males than in females. On the contrary, postadolescent acne predominantly affects females. Acne vulgaris is commonly observed in adolescents and young adults. Its prevalence rates are estimated to range from 35% to over 90% among adolescents[10]. Acne presence was varied by age group, 31% in aged 11-15 years, 35% in aged 16-20 years, 12.5% in aged 21-25 years, 7.5% in aged 26-30 years, 6.5% in aged 31-35 years and rest 7.5% in aged >35 years. Among all respondents, 1.5% completed primary level, 31% completed secondary level, 35% higher secondary level and rest 32.5% were graduate.

According to occupational status, 32.5% were employed and 67.5% were unemployed. Among 200 respondent 25% from low economic status, 35% from middle income family and 40% from high income status. According to nutritional status, 20% were Underweight (BMI < 18.5), 45% Normal weight (BMI 18.5-24.9) and 35% grouped as Overweight BMI ≥ 25). In this study the association between duration of complete cure and grades of acne vulgaris after only physical extraction like Comedon extraction and incision and drainage in nodulo-cystic acne had significant association (p 0.0006). Physical treatments for acne include comedone extraction, chemical peels and microdermabrasion, intralesion cortico-steroid injection for acne cysts and high-intensity, narrow-band blue light photodynamic therapy, as well as injectable fillers and laser resurfacing for acne scarring. However, there is limited evidence in peer-reviewed literature to support such treatments.[11] The association between socioeconomic status and grades of acne vulgaris had significant association (p 0.05), lower class had 50(25%) both in upper class 80(40%). Several potential social risk factors for acne have been studied, such as the possible role of stress, nutrition, BMI, ethnicity and family income, relatively little is known about the relationship of socioeconomic factors with acne, particularly in the younger age groups.[12] Some studies have found that increased socioeconomic status (SES) is positively associated with more acne prevalence and a higher likelihood of being referred to a dermatologist.[13,14]

Conclusion

Acne vulgaris has a substantial impact on a patient's quality of life, affecting both self-esteem and psychosocial development. Patients and physicians are faced with many over-the-counter and prescription of acne treatments and choosing the most effective therapy can be confusing. Acne has many negative effects on young adolescents. It causes discomfort, emotional stress, disfigurement and even permanent scarring to the skin. It may also cause anxiety and embarrassment in patients and may diminish the patient's physiological and social wellbeing.

Disclosure

The authors declare no conflict of interest.

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