10.21761/jms.v8i02.01

ORIGINAL RESEARCH ARTICLE

Acne Vulgaris Triggering Factors in Females at Nangarhar University Teaching Hospital

Zwaak Raihanullah[1], Imamzai I Shah[1*], Kamawal N Khah[2]

ABSTRACT

Background: Acne vulgaris is a common disease in teenagers. It is a chronic inflammatory condition of the pilosebaceous units.

Objective: To see the effect of different factors like age, skin type, diet, cosmetics, family history and pornographic material on acne.

Methods: This case-control study was conducted in the Dermatology Department of Nangarhar University Teaching Hospital, Nangarhar from August 2021 to March 2021. The study consisted on a sample of 120 subjects including 60 cases of acne and 60 controls. The data was entered in a structured close-ended questionnaire. Univariate and multivariate logistic regression was used to see the effect of different factors on acne.

Results: Age was below 20 years in 68 percent of patients and 38% of controls. Amongst patients 12% and amongst controls 7% were married. Logistic regression analysis showed that age (p = 0.001), odds ratio (0.288), Confidence interval (0.136–0.612) siblings history (p = 0.007), odds ratio (2.786), confidence interval (1.329–5.841), skin type (p = 0.000), dry skin (p = 0.173), odds ratio (0.449), confidence interval (0.142–1.422), oily skin (p = 0.002), odds ratio (3.925), confidence interval (1.684 9.146), cola drinks (p = 0.048), daily drinks (p = 0.023), odds ratio (2.975), confidence interval (1.159–7.636), cosmetic used (p = 0.004), odds ratio (4.219), confidence interval (1.577–11.285) and frequency of application of cosmetics (p = 0.010), odds ratio (3.509), confidence interval (1.347–9.1)had significant effect on acne.

Conclusion: Acne is a more common disease in teenagers; age greater than twenty plays a protective role against acne. Carbonated drinks, positive sibling history, cosmetic treatment and frequent use of cosmetics have a significant relationship with acne. It is more common in oily skin than dry and normal skin.

Keywords: Acne vulgaris, Diet and cosmetic impact on acne, Sibling's history.

How to cite this article: Raihanullah Z, Shah II, Khah KN. Acne Vulgaris Triggering Factors in Females at Nangarhar University Teaching Hospital. SRMS J Med Sci. 2023;8(2):122-125.

Source of support: Nil

Submission: 23-08-2023; **Acceptance:** 18-11-2023; **Published:** 31-12-2023

[1]Assistant Professor, [2]Professor

Department of Dermatology, Faculty of Medicine, Nangarhar University, Jalalabad, Afghanistan.

Corresponding Author: Imamzai Iqbal Shah, Assistant Professor, Department of Dermatology, Faculty of Medicine, Nangarhar University, Jalalabad, Afghanistan, Email: Raihanullah-zwaak@yahoo.com

INTRODUCTION

Acne vulgaris is a common disease with prevalence up to 80 % during adolescence. It is a chronic inflammatory condition of the pilosebaceous units.[1] There is solid evidence of a genetic background for this disease. Similarly, there is a strong correlation of the disease with influences of hormones, especially androgens, on the disorder.[2] There is no single disease which causes more psychic trauma, more maladjustment between parents and children, more general insecurity and feelings of inferiority, and greater sums of psychic suffering than does acne vulgaris.[3] Psychological factors (stress, negative emotions) can influence the generation and aggravation of skin disorders, which can result in some skin diseases. In the majority of cases the quality of life is poorly estimated by patients with skin problems.

Psycho-physiologic disorders caused by skin diseases triggering different emotional states (stress), many psychiatric disorders are responsible for self-induced skin disorders, which can lead to states of fear, depression or suicidal thoughts.[4] Surprisingly little evidence exists for the efficacy or lack of efficacy of dietary factors, face-washing and sunlight exposure in the management of acne. Based on the present state of evidence, clinicians cannot be didactic in their recommendations regarding diet, hygiene and face-washing, and sunlight to patients with acne. Advice should be individualized, and both clinician and patient should be cognizant of its limitations.[5] Oral contraceptives (OCs) have been shown to be safe and effective for the treatment of acne in most women of childbearing potential, and several have been approved by the Food and Drug.[6]

Family history of acne is a significant risk factor for acne. Hot weather sweating and certain aspects of diet (nuts, chocolate, fatty food, fried food, eggs, cakes and biscuits, spices, coffee and tea) are believed by some to be aggravating factors by acne.[7] Acne vulgaris is more prevalent in females and its prevalence and severity increase with age, as it is more prevalent in girls under and boys over 14 years of age.[8] Sex, socioeconomic status, family history, parents' education, home type, and overcrowding were found to be risk factors for some skin disorders.[9] The objective of the present study was to see the effect of different factors like age, gender, food, print material/audio video material, family history, skin type and cosmetics used on acne vuglaris.

PATIENTS AND METHODS

The case-control study contained sample of 120 subjects (60 cases of acne and 60 controls). The study population was the entire patients with acne vulgaris, visiting to the outdoor of dermatology department Nangarhar University Teaching Hospital, Nangarhar. All the variables studied (age, sibling's history and skin type) were related to the disease biologically, and some variables (cola drinks, frequency of use of cola drinks, cosmetic treatment, type of cosmetic, and frequency of use of cosmetic) were entered in the study to see the effect of socioeconomic status on the disease. The data was collected by a structured close-ended questionnaire specially designed for the study.

The inclusion criteria were based on those people with acne who visited the dermatology department of Nangarhar University Teaching Hospital for the treatment purpose of acne as cases and the people visiting the Nangarhar University Teaching Hospital without any skin disease taken as controls. Oral informed consent was obtained from the patients. Data was managed & analyzed using statistical software for social sciences (SPSS15). Descriptive statistics was used to calculate mean and standard deviation for quantitative variables and frequency with percentages for qualitative variables. Univariate and multivariate logistic regression was used to see the effect of all factors on acne.

RESULTS

Age was below 20 years in 68 percent of patients and 38% of controls. Amongst patients 12% and amongst controls 7% were married; 32% of cases and 37% of controls were from rural area. In cases 18% were under matric, 58% matric or intermediate and 23% graduate or above. In controls 23% under matric, 52% from cases and 67% from controls were students, 32% cases and 20% control were house wives, while 17% cases and 13% from control were employee.

This study shows that 38% cases and 35% controls had positive paternal history, and 45% of cases and 30% of controls had positive maternal history. Similarly, 60% cases and 35% controls had positive sibling's history. 32% in cases and 48% in controls were with normal skin. 8% cases and 28%controls were with dry skin, while 60% cases and 23% controls were with oily skin. In cases 72% had irregular menstrual history while in controls 19% had irregular menstrual history. Study shows that in cases 63% females used spicy food daily, 22%, 1 to 2 time per week, and 15% rarely. Amongst controls 72% did not take or rarely took spicy food, 22% took once or twice per week and only 3% females took them daily. About 17% of cases and 18% of controls took chocolate once or twice per week, while 5% of both cases and controls took them daily. About 38% of cases and 30% of controls took cola drinks once or twice per week, while 32% of cases and 18% of controls took them daily. 35% from cases and 27% from controls had approach to love stories. 10% of cases and 12% of control group watched action movies, while 53% from cases and 47% from controls showed their likeness towards love stories and x-graded movies. In 15% in cases and 12% in controls had approach to pornographic material. 42% in cases and 13% in controls took cosmetic treatment, while 32% of cases and 12% of controls frequently used cosmetics. Univariate logistic regression, applied to see the effect of each variable on acne separately, shows that age (p = 0.001), siblings history (p = 0.007), skin type (p = 0.000), cola drinks (p = 0.048), cosmetic used (p = 0.004) and frequency of application of cosmetics (p = 0.010) had significant effect on acne (Table 1).

Multivariate logistic regression analysis applied to check the significant combined effect of all study variables on acne, shows that skin type (p = 0.003), cosmetic used (p = 0.027) and frequency of application of cosmetics (p = 0.039) had significant effect on acne (Table 2). Odds ratio {exp(B)} shows that the odds of getting acne increases by a factor of 8.81 if someone have oily skin as compared to normal skin type. Similarly, odds of getting acne increases by factor of 16.419 if anyone use any other type of cosmetic (Table 2), and the odds increase by 13.789 cosmetics use is frequent as compared to none/occasional use of cosmetics (Table 2).

DISCUSSION

Acne vulgaris is a distressing skin condition which can carry with it significant psychological disability. Patients with acne are more likely to experience anger and are at increased risk of depression, anxiety, suicidal ideation. Certain nutrients which have been implicated as influencing the pathophysiology of acne have also been identified as important mediators of human cognition, behavior and emotions.[10] Acne vulgaris is a nearly universal skin disease afflicting 79 to 95% of the adolescent population. In men and women older than 25 years, 40 to 54% have some degree of facial acne, and clinical facial acne persists into middle age in 12% of women and 3% of men.[11]

The present study has provided sufficient evidence for a positive relationship between acne and age but no relationship in acne and marital status. In the teen ages it is most common disease in females, and after age of 20 it become less frequent in the females. This becomes more frequently occurring disease after the time of puberty. As in a study it was seen that acne is a multifaceted disorder. Its clinical presentation differs according to the age and

Table 1: Univariate logistic regression

Variable	*B*	*Wald*	*dff*	*Sig.*	*Exp ((3)*	*95% C.I. for Exp (β)*	
					Odds ratio	*Lower*	*Upper*
Age (above20)	1.245	10.499	1	.001	.288	.136	.612
Siblings (positive)	1.025	7.355	1	.007	2.786	1.329	5.841
Skin type		16.830	2	.000			
Skin (dry)	-.801	1.854	1	.173	.449	.142	1.422
Skin (oily)	1.367	10.034	1	.002	3.925	1.684	9.146
Cola drinks		6.053	2	.048			
Drinks (daily)	1.090	5.137	1	.023	2.975	1.159	7.636
Type of cosmetic		11.284	2	.004			
Cosmetic (treatment)	1.440	8.222	1	.004	4.219	1.577	11.285
Frequency (frequently)	1.255	6.600	1	.010	3.509	1.347	9.1

Table 2: Multivariate logistic regression

Variable	*B*	*Wald*	*df*	*Sig.*	*Exp (β) odds ratio*	*95% C.I. for Exp (β) lower upper*	
Siblings (positive history)	0.707	2.301	1	0.129	2.028	0.813	5.058
Skin		11.612	2	0.003			
Skin (dry)	-1.171	2.787	1	0.095	0.31	0.078	1.226
Skin (oily)	1.161	5.02	1	0.025	3.192	1.156	8.81
Spicy		3.085	2	0.214			
Spicy (1–2/week)	-0.265	0.202	1	0.653	0.767	0.241	2.439
Spicy (daily)	1.24	2.573	1	0.109	3.457	0.759	15.735
Drinks		1.834	2	0.4			
(1–2/week)	0.13	0.055	1	0.814	1.139	0.384	3.378
Drinks (daily)	0.808	1.755	1	0.185	2.243	0.679	7.414
Cosmetic		4.989	2	0.083			
Cosmetic (other)	1.482	4.872	1	0.027	4.403	1.131	16.419
Cosmetic treatment	0.396	0.449	1	0.503	1.486	0.466	4.734
Frequency (frequently)	1.348	4.282	1	0.039	3.848	1.074	13.789
Constant	-1.201	3.398	1	0.065	0.301		

gender of the subjects. Acne of the adolescent is a frequent disorder.[12] Commonly it is thought that use of fast foods, spicy foods, sweets and desserts is a risk factor for acne but our study does not support it. However, this study shows that acne has a significant relationship to the use of carbonated or cola drinks and chocolates. Previous studies have correlated aggravation of disease by various foods in 32 to 44% of cases.[13] Our study also did not correlate acne with bad hygienic conditions, low income and low education class, and paternal or maternal history of acne. The disease was found more frequently in middle or high class. However, we found a positive correlation of acne with history of the disease in the siblings.

Many studies confirm the importance of heredity as a prognostic factor for acne. Family history of acne is associated with earlier occurrence of acne, increased number of retentional lesions and therapeutic difficulties.[14,15] Skin is a very sensitive tissue and prevalence of acne varies with different types of skin. As it is a fact that menstrual history and acne have some association, but this study has shown no such evidence.

The use of different kind of soaps does not relate to acne. Beauty soap, or antibacterial soaps have no relation to acne. Similarly approach to love stories or watching different kinds of movies or approach to pornographic material, which in common enhance the enzymes secretions have no effect on acne. Cosmetics have a direct relation with skin and skin to acne, so the cosmetics and the frequent use of cosmetics are significant risk factors of acne. As supported by the results of different studies it can be concluded that significant risk factors of acne vulgaris included age, skin type (oily, mixed, or neutral skin in comparison with dry skin), insufficient sleep, and cosmetic make-up use, socioeconomic status, family history, parent's education, home type, and overcrowding.

CONCLUSION

The use of chocolate (17%) and carbonated drinks (38%) is associated with acne. Positive sibling's history (paternal 38% and maternal 45%) has a significant relationship with acne. Different skin types have different sensitivity to acne; it is more common to oily skin (60%) than dry (8%) and normal skin (32%). Frequent use of cosmetic treatment (42%) and different types of cosmetics are risk factors for acne. Acne is more common disease in teenagers (68% of patients), as the age increases its prevalence reduces; age greater than 20 plays a protective role.

REFERENCES

1. Freak J. An overview of acne vulgaris. *Nurs Times* 2006; 102:30-2.
2. Rzany B, Kahl C. Epidemiology of acne vulgaris. *J Dtsch Dermatol Ges* 2006; 4:8-9.
3. Roebuck HL. Acne: intervene early. *Nurse Pract.* 2006 ;31(10):24-43; quiz 44-5.
4. Kieć-Swierczyńska M, Dudek B, Krecisz B, Swierczyńska-Machura D, et al. The role of psychological factors and psychiatric disorders in skin diseases. *Med Pr* 2006; 57:551-5.
5. Magin P, Pond D, Smith W, Watson A. A systematic review of the evidence for 'myths and misconceptions' in acne management: diet, face-washing and sunlight. *Fam Pract* 2005; 22:62-70
6. Frangos JE, Alavian CN, Kimball AB. Acne and oral contraceptives: update on women's health screening guidelines. *J Am Acad Dermatol* 2008; 58:781-6
7. El-Akawi Z, Abdel-Latif Nemr N, Abdul-Razzak K, Al-Aboosi M. Factors believed by Jordanian acne patients to affect their acne condition. *East Mediterr Health J* 2006; 12:840-6.
8. Wu TQ, Mei SQ, Zhang JX, et al. Prevalence and risk factors of facial acne vulgaris among Chinese adolescents. *Int J Adolesc Med Health* 2007; 19:407-12.
9. Al-Saeed WY, Al-Dawood KM, Bukhari IA, Bahnassy AA. Risk factors and co-morbidity of skin disorders among female schoolchildren in Eastern Saudi Arabia. *Invest Clin* 2007; 48:199-212.
10. Katzman M, Logan AC. Acne vulgaris: nutritional factors may be influencing psychological sequelae. *Med Hypotheses* 2007; 69:1080-4.
11. Cordain L, Lindeberg S, Hurtado M, et al. Acne vulgaris: a disease of Western civilization. *Arch Dermatol* 2002; 138:1584-90.
12. Xhauflaire-Uhoda E, Goffin V, Piérard-Franchimont C, Piérard GE. How I treat acne in adolescents: a strategic algorithm without antibiotics. *Rev Med Liege* 2006; 61:667-70.
13. Wolf R, Matz H, Orion E. Acne and diet. *Clin Dermatol* 2004; 22:387-93
14. Ballanger F, Baudry P, N'Guyen JM, et al. Heredity: a prognostic factor for acne. *Dermatology* 2006; 212:145-9.
15. Khan, S. A., Alam, S. D., Bagadi, M., Anjum, R., & Yusuf, M. (2024). Chromatographic Separation of Antihistamine Drugs using HPLC. *Jabirian Journal of Biointerface Research in Pharmaceutics and Applied Chemistry*, *1*(2), 22–27.