

Original Article

FACTORS AGGRAVATING OR PRECIPITATING ACNE

Dave Kairavee, Choksi Vivek

Interns (Compulsory rotatory houseman), Dept. of Community Medicine, Surat Municipal Institute of Medical Education & Research, Umarwada, Surat, Gujarat.

Correspondence: kairaveedave@gmail.com

ABSTRACT

This cross-sectional study was conducted from 11th March to 11th April 2010 among 100 consecutive prospective patients attending the clinics of a renowned dermatologist for the treatment of Acne in the city of Surat. The study identifies variables such as consumption of spicy foods, pickles, mango, fast food, fried food; stressful situations mainly examinations, financial constraints and family disputes; sun exposure; excessive oiling of hair; pre-menstrual exacerbation; washing of face with soaps as triggers and aggravating factors as perceived and self reported by respondents. The study recommends a relook on the pertinent variables, especially the dietary ones. The study also brings out the need to formulate strategies to enable adolescents and young adults to effectively deal with the perplexing issue of Acne.

Keywords: Acne Vulgaris, Dermatologist, Isotretinoin, Aggravating factors

INTRODUCTION

Acne Vulgaris a disease unique to humans, is considered to be the most common disease of skin, occurring during the life time of individuals.¹⁻² It has been stated that 90% of individuals between puberty to 30 years of age experience some degree of acne.³ What is particularly worrisome or an often accompaniment are psychological effects like anxiety, depression, low self esteem and self confidence, embarrassment, shame, social inhibitions following or accompanying acne. These also lead to teasing and stigmatization and sometimes suicidal ideation.⁴ Acne is said to be typically vacillating in its course.⁵ Various triggers and aggravating factors have been identified, which may be accountable for periodic flares. Increasing pubertal age, seborrhea, the premenstrual phase, mental stress, and sweet and oily foods have been reported as risk factors for moderate to severe acne.⁶ It is also equally true that studies are divided on issues such as the role of diet in acne. This study attempts to explore such triggers and aggravating factors as perceived by 100 patients attending the clinics of a renowned dermatologist for the treatment of Acne in the city of Surat.

MATERIALS AND METHODS

This cross-sectional study was conducted among 100 consecutive prospective patients attending the clinics of a renowned dermatologist in the city of Surat for the treatment of Acne Vulgaris. The study period was spread over a 31 day period from 11th March to 11th April 2010. The respondents were interviewed using a semi structure questionnaire after obtaining their informed consent. The questionnaire was developed with the inputs of various stakeholders and suitable pre-tested. The inclusion criteria comprised of all of the consecutive patients with complaint of Acne who had agreed to participate in the study during the period of data collection. It was observed that all of the patients had agreed to participate in the study and

hence there was no exclusion due to non-consenting patients.

The exclusion criteria comprised of patients of Acne with a co-associated skin disorder or a psychiatric problem, however since there were no patients during the time period of the conduction of this study, hence there were no exclusions due to this criteria. All of the studied patients were quizzed for identification of various triggers and aggravating factors, which the patients had identified as being associated with flare ups of Acne in their instance. Data analysis was done using chi-square test and independent t-test.

OBSERVATIONS AND DISCUSSION

The general profile of the patients revealed that 62% comprised of females and 38% of males. The mean age of the patients was 25.28 ± 9.10 years. The mean age was higher for males (26.91 ± 9.34) as compared to females (22.60 ± 8.13). The characteristics of the majority of the respondents were belonging to Hindu religion (93%); with a university degree (70%); unmarried (60%); having a high socio economic class (54%). The aforementioned observations are in line with the clinic settings and the expected clientele. The mean age for onset of acne was found to be 17.67 ± 7.54 years. The mean age for the onset of Acne was found to be higher for females (19.17 ± 7.77) as compared to males (15.74 ± 5.86). This finding is contrary finding to the observations as reported by earlier studies, which had reported an earlier onset of Acne in females. However, this finding can be ascribable to the fact that this study does not study the prevalence of Acne in a defined population, rather it is based on selective profile of clinic attendees.

It was observed that 50% of individuals had been suffering from acne for a period of less than 5 years. 32% had acne since 5-10 years, and 18% had acne since more than 10 years. According to dietary pattern, 51% were pure vegetarian and 49% were

having mixed diet and amongst them 53% were eating eggs once in a week, 33% twice in a week and others were having eggs more than two times in a week.

Earlier studies have reported that Acne is said to be typically vacillating in its course,⁵ and the same feature of Acne was reported by varying percentages of the respondents in this study with flares associated with various triggers and aggravating factors. The vast majority (85%) of the respondents in the study had reported that consumption of spicy foods led to flares and/or aggravated the pre-existing acne in their instance. In fact this emerged as the major aggravating factor as identified and perceived by the respondents in this study. Similarly more than half of the respondents had reported of having experienced flare up of acne with pickle (54%) and with fast food (51%). Over one-thirds (37%) had experienced flares of Acne with consumption of fried food.

It has already been pointed out earlier that literature is somewhat divided on the role of diet in Acne. From the earlier stance that diet has no role in Acne, there have been concerns of the quality of data which had led to these edicts. The IAA Consensus Document as published in the Indian Journal of Dermatology, Venereology and Leprology in 2009 had reported that while spices and oils may not directly cause acne, the repeated exposure to oil vapours during cooking may lead to Acne.⁵ This raises a crucial issue, as to whether we agree with the possible role of diet in Acne or otherwise. It is quite likely that even the statement that the repeated exposure to oil vapours during cooking may lead to Acne may not hold true, atleast in all instance. For example some of the respondents may not be there in the house when the cooking is done, as for instance males and females engaged in occupations due to which they may not be at home during the time when food is cooked in their house, and/ or the fact that these respondents and others self report of explicit flare ups of Acne with consumption of fried/ fast or oily foods.

A study has nicely brought out the fact that in last 50 years, while reviewing 250 trials of acne therapy only a single controlled study could be found in which diet was even mentioned.⁷ Relative intake of ω -6 and ω -3 poly unsaturated fatty acid have been stated to influence inflammatory process. As the vegetable oils are rich in ω -6 fatty acid, foods processed with these vegetable oils, like in India, pickles, fried foods etc. can promotes proinflammatory cytokines and eicosanoid profile that leads to development of inflammatory disorders like acne.⁷ This study also reports of other dietary flare ups with consumption of other food stuffs such as mango (44%); chocolates (31%); butter (24%); Chinese food (14%); cheese (10%) in descending order. What we observe here is that again these food items are associated with either oils or the process of frying, which has already been

discussed, with the exception of mangoes. It needs mention that mangoes are known to lead to Acne like conditions as per our cultural beliefs and the concept of sourness of Ayurveda. Another fact is that harmful agents are often used for the ripening of mangoes and it is quite possible that these agents could sometimes lead to Acne flare ups. Also, our cultural beliefs are replete with the association of consumption of oils and Acne. In any condition the self reporting as observed in the study, our cultural beliefs and the paucity of data on which the current dietary recommendations are based point to the need to have a relook on the dietary association and Acne based on sufficient scientific data.

Experiencing of Acne flare-ups in stressful situations was another important observation of this study with 81%, 63% 54% of respondents giving a history of having experienced flaring up of acne during stressful situations as examinations, during financial constrains and during family disputes. Other stressful situations combinedly were reported by 35% respondents as leading to Acne exacerbations. These finding of acne flares up in stressful conditions, including psychological and emotional stress has been supported by earlier researchers.^{4,9,10}

Excessive sun exposure often leads to skin damage and leads to acne in weeks after exposure.¹¹ In the study, only one respondent was using a two wheeler, whereas all the remaining respondents were using either four wheelers or were using public transport system in almost equal distribution. The ample availability of private four wheeler usage was reflected among these respondents by the lower usage of sunscreen (30%), predominantly by those using the public transport system. An important finding among those using sunscreen was the predominant usage of cosmetic brands (70%) with only 30% using sunscreens as prescribed by their treating doctors, leaving aside the issue of possible advantages of better tolerance of water based sunscreens over those oil based.

Excessive oiling of hair has been reported to lead to exacerbation of the acne condition,¹² and among the 71 respondents using oil, 55% had reported of having experienced Acne flares after oiling hairs. These comprised mainly of females (61.5%). Despite having experienced the problem of flare-ups, these respondents had continued with oil usage mainly because they found it difficult to manage hairs without oil usage and many of them continued with this practice, despite the advice of their treating doctor. Out of these 71% using oil, the vast majority (85.9%) were oiling their hairs less than three times a week and the remaining 14.1% were oiling their hairs more than three times a week due to the same hair management issues.

In the study, 19% of female had experience of premenstrual exacerbation of acne. These figures are

quite low as compared to the premenstrual flaring up of acne among 60-70% of females suffering from Acne patients^{2,5,13} and needs further exploration. The currently accepted hypothesis states that the pilosebaceous duct becomes smaller between 15 to 20 days of menstrual cycle and the blockage leads to premenstrual acne.^{1,5}

In our study, almost all (93%) of respondents were in the habit of washing their face only with plain water as they had experienced flaring up of their Acne with usage of soaps and over the period of time had become comfortable with the idea of plain water usage. The remaining 6% and 1% were using soaps and face wash respectively. Proper washing of face and skin care have been stated to help remove bacteria and oils which cause acne. This study points to a need for further evidence based research on the possible factors which lead to flare ups in Acne in Indian context and recommends formulation of strategies to enable adolescents and young adults to effectively deal with the perplexing issue of Acne.

ACKNOWLEDGEMENTS

The authors are grateful to Dr. Shubhangini Choksi, Consultant Dermatologist, Cosmetologist & Venereologist, Surat and Dr. R. K. Bansal, Professor and Head, Dept. of Community Medicine, Surat Municipal Institute of Medical Education & Research, Surat for their kind assistance in the conduction of this study.

REFERENCES

1. Adityan B, Thapa DM. Profile of acne vulgaris- A hospital based study from south India. *Indian J Dermatol Venereol Leprol* 2009; 75: 272-8.
2. Tehrani R, Dharmanlingam M. Management of premenstrual acne with COX-2 inhibitors: A placebo controlled study. *Indian J Dermatol Venereol Leprol* 2004; 70:345-9.
3. Raj Kubba, AK Bajaj, DM Thappa, Rajeev Sharma, Maya Vedamurthy, Sandipan Dhar, S Criton, Rui Fernandez, AJ Kanwar, Uday Khopkar, Malavika Kohli, VP Kuriyipe, Koushik Lahiri, Nina Madnani, Deepak Parikh, Sudhir Pujara, KK Rajababu, S Sacchidanand, VK Sharma, Jayakar Thomas. Acne in India: Guideline for its management-Introduction. IAA Consensus Document. *Indian Journal of Dermatology, Venereology and Leprology*; 2009;75 (S1-S2)
4. Raj Kubba, AK Bajaj, DM Thappa, Rajeev Sharma, Maya Vedamurthy, Sandipan Dhar, S Criton, Rui Fernandez, AJ Kanwar, Uday Khopkar, Malavika Kohli, VP Kuriyipe, Koushik Lahiri, Nina Madnani, Deepak Parikh, Sudhir Pujara, KK Rajababu, S Sacchidanand, VK Sharma, Jayakar Thomas. Acne in India: Guideline for its management-Acne and quality of life. IAA Consensus Document. *Indian Journal of Dermatology, Venereology and Leprology*; 2009; 75 (S4-S5).
5. Raj Kubba, AK Bajaj, DM Thappa, Rajeev Sharma, Maya Vedamurthy, Sandipan Dhar, S Criton, Rui Fernandez, AJ Kanwar, Uday Khopkar, Malavika Kohli, VP Kuriyipe, Koushik Lahiri, Nina Madnani, Deepak Parikh, Sudhir Pujara, KK Rajababu, S Sacchidanand, VK Sharma, Jayakar Thomas. Acne in India: Factors precipitating or aggravating Acne. IAA Consensus Document. *Indian Journal of Dermatology, Venereology and Leprology*; 2009; 75 (S1): 10-11.
6. Ghodsi Z, Orawa H, Zouboulis CC. Prevalance, severity and severity risk factors of acne in high school pupils: A community-based study. *Epidemiology of acne in high school pupils. J Invest Dermatol*; 2009; 129(9):2136-41.
7. Cordain L. Implication for the role of diet in acne. *Semin Cutan Med Surg* 2005; 24:84-91.
8. Cordain L, Lindeberg S, Hurtado M, Hill K, Eaton SB, Miller JB. Acne vulgaris- a disease of western civilization. *Arch Dermatol* 2002; 138:1584-90.
9. Valia RG, Valia AR. IADVL Textbook and Atlas of Dermatology- Volume 1. Mumbai: Bhalani Publishing House, 2003, 694.
10. Lev Pavlovsky, Alon Friedman. Pathogenesis of Stress-Associated Skin Disorders: Exploring the Brain-Skin Axis. Tur E (Ed): *Environmental Factors in Skin Diseases. Curr Probl Dermatol. Basel: Karger, 2007, vol 35:136-145*
11. <<http://blog.natural-acne-solution.com/category/sun-and-acne/>>
12. <<http://www.reduce-acne.com/cosmeticacne.html>>
13. Finlay YA. The pathogenesis, disability and management of acne. *Indian J Dermatol Venereol Leprol* 1990;56:349-53