A PROSPECTIVE STUDY ON DRUG UTILIZATION PATTERN AND QUALITY OF LIFE ASSESSMENT IN ACNE VULGARIS PATIENT VISITING TERTIARY CARE HOSPITAL

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ABSTRACT:

BACKGROUND: Acne is a prevalent skin disease that occurs in most of the teenagers. Irrational usage of the drugs has always been an unsolved problem in the healthcare field. Usage of native medicines was a major hurdle in treating acne.

AIM: To study the drug utilization pattern in and quality of life in patients of acne vulgaris visiting as outpatients in tertiary care teaching hospital.

METHODOLOGY: A prospective observational study was conducted in the Department of Dermatology, Venereology and Leprosy at Government Cuddalore Medical College Hospital (Erst RMMCH), Chidambaram, for a period of 6 months from November 2023 to April 2024. Approval from the institutional ethics committee was obtained before the initiation of this study. Patients presenting with signs and symptoms of acne vulgaris diagnosed by the DVL department were selected for the study. Patients who were not willing to participate were excluded.

RESULT: In our study, from the total participants (n=50), females (64%) are highly affected, followed by males (36%), with a mean age of 19.54 ± 3.96 years. Acne vulgaris grade 3 and grade 4 were highly prevalent in the age groups of 20 and 19, respectively. The most utilized drug for acne vulgaris is topical retinoid (adapalene), followed by topical exfoliant (salicylic acid), topical antibacterial (clindamycin), and systemic (azithromycin). From the 43 participants, there was a significant change in pre-treatment and post-treatment CADI scores ($p<0.0001$) at the second week of treatment compared to its initial visit. In native medication, aloe vera and gram flour are more commonly utilized by the patients before their treatment.

CONCLUSION: This study reveals that the prescription follows an adherence to the Indian guidelines for the acne medications and confirms its rational usage of drugs. Significantly, it improves the quality of life. Application of native medication against acne was widely practiced.

KEYWORDS: Acne vulgaris, Quality of life, Cardiff acne disability index (CADI), native medication

INTRODUCTION:

Acne vulgaris is a most frequent disorder of the pilosebaceous unit characterized by the presence of comedones, papules, pustules, and nodules on the face, chest, and back. [1] Resulted from increased sebum secretion due to improper medication usage, sunlight exposure, endocrine disorder, hormonal imbalance, etc. [2-4] However, it occurs after puberty and lasts for a year. [5] But in some circumstances, it lasts for more than a year. Especially those around 12-16 years are affected, as 35.23% are among all age groups. [6]

Due to defacement, it will develop low self-esteem, depression, social phobia, anxiety, and suicidal ideation in adolescents. It worsens their quality of life. [7,8] In order to improve quality of life, the treatment consists of topical retinoids, topical antimicrobials, oral antibiotics, benzyl peroxide, oral isotretinoin, and oral corticosteroids. [9, 10] The Cardiff Acne Disability Index was a scale used to measure the impaired quality of life specifically by acne vulgaris. It consists of 5 different questionnaires with a score range from zero to three. [11]

But prior to seeking treatment at clinics or hospitals, most patients began to take over-the-counter medication, herbal remedies, and home remedies. Some patients follow their friends' and relatives' suggestions. Only a few patients came to the outpatient department for physician treatment. Herein, this study involves the observation of drug utilization patterns, assessment of quality of life, and documentation of native medication composition.

METHODOLOGY:

A prospective observational study was conducted in the department of dermatology, venereology, and leprosy at Government Cuddalore Medical College Hospital (Erst RMMCH), Chidambaram, for a period of 6 months from November 2023 to April 2024. Approval from the institutional ethics committee was obtained before the initiation of this study. Patients presenting with signs and symptoms of acne vulgaris diagnosed by the DVL department were selected for the study. Patients who are not willing to participate will be excluded. Prior to the start of the study, written informed consent forms and information sheets in English and the vernacular language were obtained from patients. Demographic, therapeutic management, and QOL assessment details were collected from the patient. A total of 50 prescriptions were observed for the analysis of drug utilization patterns. Among 50 patients, 43 patients were followed for one month, and 7 patients lost follow-up due to some reason. For the documentation of native medicine composition, nearly 22 participate in response to it.

DATA ANALYSIS:

For analyzing demographic details from 50 prescriptions and CADI scores from 43 patients, the SPSS statistical tool was used.

RESULTS:

A total of 50 prescriptions for acne vulgaris were collected over a 6-month period and were analyzed. And for the CADI score, 43 patients were prospectively followed for 2 weeks after the initial visit, and 7 lost their follow-up. Out of 50 patients, 32 (64%) were female and 18 (36%) were male, with a mean age of 19.54 ± 3.96 years. Grade 3 (24%) and grade 4 (24%) were the most recorded types of acne, followed by grade 1 (18%). Through the analysis of prescriptions, it consists of comedolytics, exfoliants, retinoids, antibacterials, anti-ulceratives, supplements, and other drugs. The topical dosage form (72.93%) was the most commonly prescribed dosage form. Among this category, retinoids (31.58%) were the most frequent drugs utilized in the treatment of acne vulgaris, followed by antibacterials (24.06%) and exfoliants (15.79%), as shown in Figure 1. Overall usage of drugs was shown in Table 1 with a mean usage of 9.25±11.28 of retinoids followed by 8.33±2.33 of antibacterials. In retinoids, adapalene (80%) was prescribed for most patients.

A student paired t-test was performed; there was a significant difference in CADI score before (mean = 7.88, SD = 4.13) and after treatment (mean = 5.86, SD = 4.28) at condition $t(43) = 6.46$; $p < 0.0001$. Thereby, it statistically proves that the quality of life of the acne vulgaris patient was improved by the treatment.

For the documentation of native medication usage, 22 patients share their experience with the list of the substances they used to treat acne in their home. The list of native medications was shown in Table 2. In that list, aloe vera (19.51%) and gram flour (19.51%) were most particularly and frequently used by most of the patients.

FIGURE 1: Distribution of drugs based on category

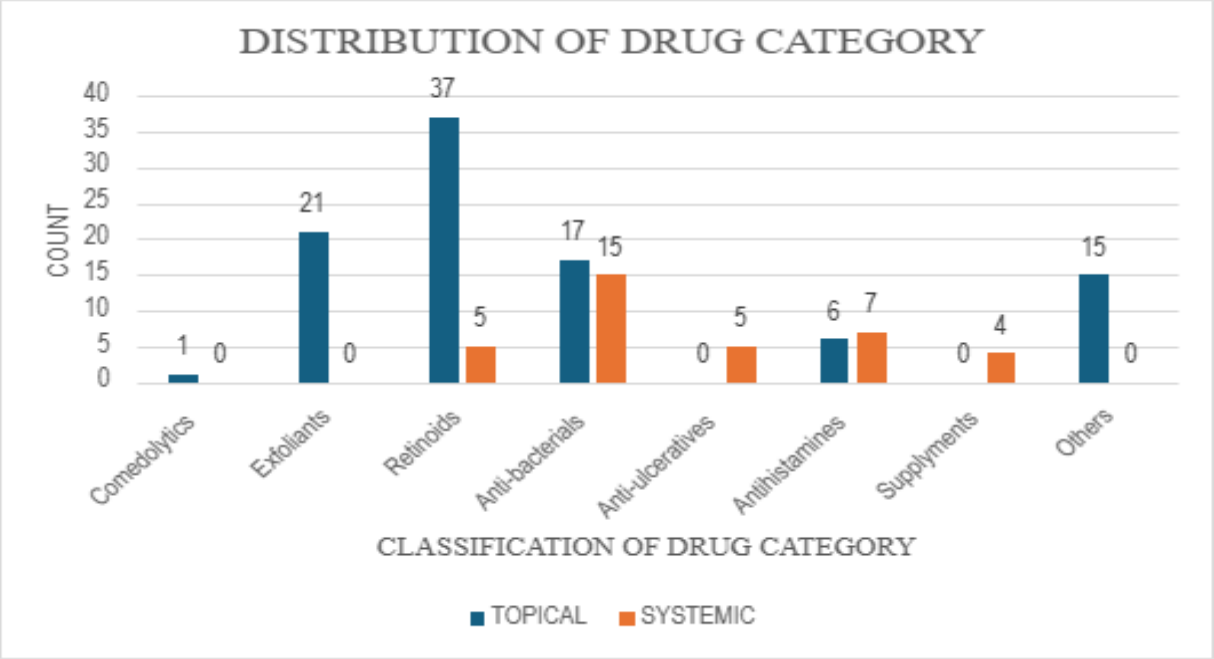

TABLE 1: OVERALL USAGE OF DRUG FOR ACNE TREATMENT

Category	Name of the drug	No.of . Drugs Ultilized	Percentage
Comedolytics	Benzoyl peroxide (2.5%)	1	0.75%
Exfoliants	Salicylic acid	21	15.79%
Retinoids	Tretinoin (0.025%)	2	1.50%
	Adapalene (0.1%)	28	21.05%
	Isotretinoin (10mg&20mg)	5	3.76%
	Mean ± SD	9.25 ± 11.28	
Anti-bacterials	Clindamycin (1%)	10	7.52%
	Azithromycin (250mg)	10	7.52%
	Doxycycline (100mg)	5	3.76%
	Mean ± SD	8.33±2.33	
Retinoids and antibacterials	Adaphalene and clindamycin	7	5.26%
Anti-ulceratives	Ranitidine (150mg)	5	3.76%
Antihistamines	Chlorpheniramine (4mg)	2	1.50%
	Cetirizine (10mg)	5	3.76%
	Acnorm lotion	6	4.51%
	Mean ± SD	4.33 ± 2.08	
Supplyments	Vitamin c (100mg)	2	1.50%
	B complex (100mg)	1	0.75%
	Multivitamin	1	0.75%
	Mean ± SD	1.33 ± 0.57	
Others	Sunscream	11	8.27%
	Zinc oxide	4	3.01%
	Mean ± SD	7.5 ± 4.95	

TABLE 2: List of native medication

S.NO	NATIVE COMPOSITON	PERCENTAGE
01.	Multani mitti and rose water	4.88%
02.	Honey plus turmeric	7.32%
03.	Honey plus cinnamon	7.32%
04.	Aleo vera gel	19.51%
05.	Gram flour	19.51%
06.	Curd	2.44%
07.	Turmeric powder	4.88%
08.	Acalpha indica (kuppaimeni)	2.44%
09.	Turmeric and tomato	4.88%
10.	Neem paste	4.88%
11.	Carrot and milk	9.75%

12.	Coffee powder	9.75%
13.	Sandalwood	2.44%

DISCUSSION:

This study was discussed based on the aim and the following supportive studies. In our study, from the total participants (n=50), females (64%) are highly affected, followed by males (36%), with a mean age of 19.54 ± 3.96 years. Among them, 96% of study participants are unmarried. Both acne vulgaris grade 3 (24%) and grade 4 (24%) were highly affected in the ages of 20 and 19, respectively. Acne vulgaris grade 1 (28.13%) was more common in females. Acne vulgaris grade 3 (55.55%) was more common in males. A similar study was found in Anas Ahmad, Mohd. Tausif, et al., where females were highly reported in acne vulgaris. (12)

The first objective was to study the drug utilization pattern in acne vulgaris patients. From the study of drug utilization patterns in acne vulgaris patients, retinoids (31.58%) were highly utilized, followed by antibacterials (24.06%) and exfoliants (15.79%). Regarding dosage form, topical form (72.93%) was highly utilized. We analyzed 50 prescriptions; adapalene (21.05%) was highly used among retinoids. Salicylic acid (15.79%) from exfoliants and clindamycin (7.52%) as well as azithromycin (7.52%) from antibacterials were highly utilized. A study done on a tertiary care hospital in Ahmedabad by Kanishka Uttamchandani et al. performed a drug utilization evaluation. Clindamycin phosphate (26.83%) was highly prescribed among antibacterials in topical form, and azithromycin was highly prescribed among antibacterials in systemic form. (13) The above treatment follows the guidelines of the Indian Association of Dermatologists, Venereologists, and Leprologists (IADVL). They suggested that the first-line treatment consist of topical retinoids and exfoliants, followed by systemic therapies consisting of oral antibiotics and isotretinoin. (10)

The second objective was to study the QOL through the CADI score. There was a significant difference in pre-treatment and post-treatment CADI scores: $t(43) = 6.46$; $p < 0.0001$.

The third objective was to study the drug composition in the anti-acne medication used by the patient in native medicine. In native medication, aloe vera (19.51%) and gram flour (19.51%) are more commonly used by the patients.

The limitation of the study was that it was carried out in a small population with a single center. And as well, it is a prospective study; a small number of patients were lost to follow-up so far in the assessment of improvement of CADI scores.

CONCLUSION:

This study reveals that the prescription follows an adherence towards the Indian guidelines by IADVL for the acne medications and confirms its rational usage of drugs. Significantly, it improves the quality of life. Application of native medication against acne was widely

practiced. Using different kinds of substances as a native medication was a trend among the teens. Adapalene was the most prescribed first-line retinoid for the treatment, sometimes followed by oral isotretinoin seems to provide better results.

CONFLICT OF INTEREST:

None

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