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Original Article

Study of Prescription Pattern for Acne Vulgaris in Dermatology OPD in a Tertiary Care Teaching Hospital

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ABSTRACT

OBJECTIVE: Present study was conducted to describe the prescribing practices of prescriptions in Acne vulgaris patients in Dermatology OPD to promote rational prescribing.

METHODS: This study was conducted by the Department of Pharmacology in outpatient department of dermatology of Rama Medical College Hospital & Research Centre, Hapur, UP, India. A total of 170 prescriptions were evaluated for Acne vulgaris. Demographic data (age, gender), disease data (acne vulgaris), data pertaining to drugs (drugs prescribed, dose, strength, route and adverse effects) were noted.

RESULTS: 170 cases of acne vulgaris were analyzed.73 (42.94 %) patients were male and 97 (57.06%) female with a male/ female ratio of 1: 1.33. Majority of patients 109 (64.12 %) belonged to 15- 25 years age group, 56 (32.94 %) 26-40 years and 5 (2. 94 %) >40 years.

Topical monotherapy was prescribed in total 139 patients and out of them 51 patients were prescribed benzoyl peroxide (5%), 21- benzoyl peroxide (2.5 %), 26-clindamycin (1 %), 20- adapalene (0.05 %) and 21- ketoconazole (2%). Topical polytherapy was prescribed in total 31 (12 male and 19 female) patients. Systemic drugs were prescribed as monotherapy in total 72 (29 male and 43 female) cases and out of them azithromycin was advised in 49 and. Levo-cetirizine was received by 23 patients. Systemic polytherapy consisting of doxycycline and ranitidine were prescribed in total 98 cases.

CONCLUSIONS: The prescription audit can be an eye opener for the prescribers. Such periodic audits should be conducted to rationalize the prescription, reduce errors and suggest effective management of acne. This study can help to provide feedback to the prescribers, thereby increasing the awareness and improve patient care by rational utilization of drugs.

KEYWORDS: Acne Vulgaris, Dermatology, Prescription pattern.

INTRODUCTION

Skin diseases are common and cause a huge disease burden globally. Collectively skin is the 18th leading cause of health burden worldwide and it was 4th leading cause of nonfatal health burden in 2010 globally.[1] The skin disorders constitute 2% of total Out Patient Department (OPD) consultations worldwide.[2]

Acne vulgaris is a common chronic skin disease involving blockage and/or inflammation of pilosebaceous units (hair follicles and their accompanying sebaceous gland). Acne can present as noninflammatory lesions, inflammatory lesions, or a mixture of both, affecting mostly the face but also the back and chest.[3]

Acne develops as a result of interplay of the following four factors: (1) follicular epidermal hyperproliferation with subsequent plugging of the follicle, (2) excess sebum production, (3) the presence and activity of

The commensal bacteria *Propionibacterium acnes*, and (4) inflammation.[4]

Acne vulgaris is characterized by noninflammatory, open or closed comedones and by inflammatory papules, pustules, and nodules. Acne vulgaris typically affects the

areas of skin with the densest population of sebaceous follicles (eg, face, upper chest, back). Local symptoms of acne vulgaris may include pain, tenderness, or erythema.

In addition to these, lithium, isoniazid, phenytoin, corticosteroids, anabolic steroids, and oral contraceptives with high androgenic activity are also responsible for the disease.[5]

Prescription writing is a science and art, as it conveys the message from the prescriber to the patient. The pattern of drug use in a hospital setting need to be monitored intermittently in order to analyses the rationality and offer feedback and/or suggestions to drug prescribers for suitable modifications in the prescription pattern so as to increase the therapeutic benefit and reduce adverse effect.6

In India, there are various problems in prescription pattern of drugs like irrational drug combinations, overuse of multivitamins, unnecessary use of antibacterial in fungal conditions and prescribing drugs from same class.[7] It contributes to the emergence of antimicrobial resistance. Dermatologists account for almost 5% of antibiotic prescriptions worldwide and most of the conditions require prolonged treatment.[8] Further, the skin conditions are wrongly diagnosed and treated. Thus continuous monitoring is needed to evaluate pattern of drug use to detect any changes from contemporary practices or available guidelines. Hence in order to generate data, drug utilization studies are need of the hour.

The drug utilization research or studies are the powerful exploratory tools to ascertain the role of drugs in the society which refers to the marketing, distribution, prescription, and use of drugs with special emphasis on the medical, social and economic consequences.[9] Rational drug prescribing is defined as the use of the least number of drugs to obtain the best possible effect in the shortest period and at a reasonable cost.[6]

Present study was conducted to describe the prescribing practices of prescriptions in Acne vulgaris patients in Dermatology OPD to promote rational prescribing.

MATERIALS AND METHODS

This study was conducted by the Department of Pharmacology in outpatient department of dermatology of Rama Medical College Hospital & Research Centre, Hapur, UP, India. A total of 170 prescriptions were evaluated for Acne vulgaris. Demographic data (age, gender), disease data (acne vulgaris), data pertaining to drugs (drugs prescribed, dose, strength, route and adverse effects) were noted. These data were analyzed to evaluate the prescription pattern and rationality of the use of drugs in the treatment of acne vulgaris. Approval of the Institutional Ethics Committee was obtained prior to commencement of the study. Written informed consent was taken from all the participants.

Table 1: Topical Monotherapy and Polytherapy treatment in acne vulgaris

Drugs	Male				Female				TOTAL	
	Mono		Poly		Mono		Poly			
	N.	%	N.	%	N	%	N	%	N	%
Benzoyl peroxide (5%)	24	14.12			27	15.88			51	30.0
Adapalene (0.05%)	8	4.71			12	7.06			20	11.76
Clindamycin (1%)	10	5.88			16	9.41			26	15.29
Benzoyl peroxide (2.5%)	11	6.47			10	5.88			21	12.35
Ketoconazole (2%)	8	4.71			13	7.65			21	12.35
Clindamycin phosphate (1%') Aloevera(10%), liquid paraffin (7%), white soft paraffin (5%)			12	7.06			19	11.18	31	18.24
	61	35.88	12	7.06	78	45.88	19	11.18	170	100

Table 2: Systemic monotherapy and polytherapy treatment in acne vulgaris.

Drugs	Male				Female				TOTAL	
	Mono		Poly		Mono		Poly			
	N	%	N	%	N	%	N	%	N	%
Azithromycin (500mg)	20	11.76			29	17.06			49	28.82
Levo-cetirizine (5mg)	9	5.29			14	8.24			23	13.53
Doxycycline (100mg) Ranitidine (150mg)			44	25.88			54	31.76	98	57.65
	29	17.06	44	25.88	43	25.29	54	31.76	170	100

RESULTS

170 cases of acne vulgaris were analyzed.73 (42.94 %) patients were male and 97 (57.06
%) female with a male/ female ratio of 1: 1.33. Majority of patients 109 (64.12 %) belonged to 15- 25 years age group, 56 (32.94 %) 26-40 years and 5 (2. 94 %) >40 years.

Topical monotherapy was prescribed in total 139 patients (61 male and 78 female) and out of them 51 patients were prescribed benzoyl peroxide (5%), 21-benzoyl peroxide (2.5 %), 26-clindamycin (1 %), 20-adapalene (0.05 %) and 21- ketoconazole (2%). Topical polytherapy was prescribed in total 31 (12 male and 19 female) patients. It contained clindamycin phosphate (1%), aloevera (10%), liquid paraffin (7%), white soft paraffin (5%). [Table 1]

Systemic drugs were prescribed as monotherapy in total 72 (29 male and 43 female) cases and out of them azithromycin was advised in 49 and. Levo-cetirizine was received by 23 patients. Systemic polytherapy consisting of doxycycline and ranitidine were prescribed in total 98 (44 male and 54 female) cases. [Table 2]

DISCUSSION

A prescription by a doctor is a reflection of physician's attitude towards the disease and the role of drug in its treatment. The ultimate outcome of the dermatological prescription analysis gives a message to the prescribing physician to achieve rational medical care and provides an insight into the nature of health care at that facility.[10]

In the present study, a total of 170 prescriptions were analysed. The patients had a mean age of 22.79 ± 0.86 yrs which was comparable to the study by Kaur S[11], Santosh Kumar et al.[12]

International guidelines for management of acne vulgaris recommend topical agents; benzoyl peroxide, antibiotics, retinoids, etc as first-line treatment of acne vulgaris.[13] Bacterial resistance to benzoyl peroxide has not been reported.[14]

Mild to moderate lesions respond best to topical anti-inflammatory agent such as benzoyl peroxide, adapalene and topical antibiotic such as clindamycin are the most popular in the management of acne. If acne vulgaris involves extensive disease (20 % of body is involved) systemic therapy (oral azithromycin (500 mg thrice weekly) is indicated. It provides significant relief, although evidence based studies have showed that doxycycline (100 mg once daily) is more effective than azithromycin. Macrolides, co-trimoxazole, and trimethoprim may offer some degree of relief.

The use of fixed dose combination may help to reduce the cost and improve patient compliance. It is evident that there is good deal of tendency towards polypharmacy in dermatology for the symptomatic treatment for severe and troublesome symptoms of acne reported by the patients. The average number of drugs per prescription must be kept as low as possible to avoid drug interactions, adverse drug reactions, poor medication compliance and increased cost of prescription. Acne vulgaris may be complicated by bacterial super infection and bacterial culture should be considered with the presence of exudates weeping and crusting. Combination therapy with topical benzoyl peroxide and clindamycin has been recommended in potentially infected acne vulgaris Marginal benefit has been demonstrated with their use.[15] Recently, 405–420 nm of ultraviolet free blue light, pulsed dye laser (585 nm), have been recommended for physical treatment of acne vulgaris. Isotretinoin is recommended for refractory acne.[16,17]

CONCLUSION

The prescription audit can be an eye opener for the prescribers. Such periodic audits should be conducted to rationalize the prescription, reduce errors and suggest effective management of acne. The hospital administration can look into the issues in the hospital by implementing a formulary into the system so that physicians restrict their prescribing for effective therapy to the patients as essential drugs will be incorporated in hospital pharmacy. This study can help to provide feedback to the prescribers, thereby increasing the awareness and improve patient care by rational utilization of drugs.

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