

Pattern of skin diseases and common drugs prescribed in dermatology OPD of an Indian tertiary care hospital

Surabhi Gupta^{1*}, Wase Khan¹, Arvind Krishna²

¹Department of Pharmacology, Subharti Medical College, Meerut, Uttar Pradesh, India
²Department of Dermatology, Subharti Medical College, Meerut, Uttar Pradesh, India

Received: 15 November 2016

Accepted: 09 December 2016

***Correspondence to:**

Dr. Surabhi Gupta,

Email:

surabhi.gupta32@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: The pattern of skin diseases varies from one country to another and across different parts within the same country. The prevalence of skin disease in the general population varies from 11.16 % to 63 %. Patients in their second and third decades of age form the largest group of population. A proper treatment is essential for cure and control of these diseases. The aim of the study was to find the pattern of skin diseases in Meerut district of western UP and common group of drugs prescribed for them.

Methods: It was a prospective, observational, single center study. The relevant data was collected from OPD prescriptions by taking photographs of the prescriptions and details were filled in the predesigned proforma.

Results: A total of 500 OPD prescriptions were collected and analyzed for demographic profile, disease incidence and drug prescription. Three most common conditions observed were tinea (15.25%), acne (12.36%), drug induced cutaneous reactions (10.11%). Antifungals (19.4%), Antibiotics (17.6%), Antihistamines (15.9%) and Corticosteroids (9.4%) were the most common class of drugs prescribed. Dosage forms prescribed were mostly topical (51.2%) in the form of ointments, creams, lotions, shampoo, powders.

Conclusions: From our study we found out that tinea (15.25%) and acne (12.36%) were more common in this region and antifungals were most the commonly prescribed group of drugs (19.4%). Number of drugs/prescription was much higher (4.1) than the recommended limit of 2 approved by WHO and practice of polypharmacy was also commonly seen.

Keywords: Acne, Antifungals, Antibiotics, Corticosteroids, Skin diseases, Tinea

INTRODUCTION

Healthy and attractive skin plays an important role in most people's self-esteem. Skin diseases, however are common clinical entities. The pattern of skin diseases varies from one country to another and across different parts within the same country¹. The prevalence of skin disease in the general population varies from 11.16 % to 63 % as seen in various studies.¹ Patients in their second and third decades of age form the largest group of population (3.7 percent to 51.17 percent).²

Drugs can also induce skin reactions ranging from mild one like rashes, urticaria, itching to some potentially life threatening ones for eg fixed drug eruptions, Stevens Johnson syndrome or Toxic Epidermal Necrolysis.³

Public awareness regarding personal hygiene and healthy living is necessary to reduce the burden of skin diseases and for improved quality of life in people especially in developing nations.

Prescription writing is a science and art, as it conveys the message from the prescriber to the patient.⁴ A prescription order is a written instruction of doctors to pharmacist to supply drugs in particular form to a patient and the directions to the patients regarding the use of medicines.

Drug utilization studies are the powerful exploratory tools to ascertain the role of drugs in the society and have become an essential part of pharmacoepidemiology providing the insights into various aspects of drug

prescribing and drug use like pattern of use, quality of use, determinants of use and outcomes of use.

We did not come across any study to find the pattern of skin diseases in Meerut district of western UP and our hospital caters to healthcare needs of city as well as nearby villages, hence we planned the present study in collaboration with dermatology OPD to find the pattern of skin diseases in this region and the common drugs prescribed for them.

METHODS

Study design

This was a prospective, observational, single center study conducted at Dermatology OPD of CSSH, Meerut from November 2013 to December 2014. Patients who met the listed inclusion and exclusion criteria were recruited in the study. Written informed consent was taken from all patients. Approval from the institutional ethical committee was taken before initiating the study. The study was done in accordance with the GCP guidelines.

Inclusion criteria

Patients of all age group and both genders suffering from various dermatological disorders.

Exclusion criteria

Follow up patients were not included in the study.

The relevant data was collected from OPD prescriptions by taking photographs of the prescriptions and details were duly filled in the predesigned proforma.

Prescriptions were analyzed for following information:

1. Type of skin disorders.
2. Data pertaining to drug therapy: Drugs prescribed groups to which the drugs belong, dosage forms, route, frequency and duration of administration.

Statistical analysis

SPSS 21 was used for statistical analysis. Results were expressed in terms of percentage.

RESULTS

In all, a total of 500 OPD prescriptions were collected and analyzed for demographic profile, disease incidence and drug prescription. The demographic profile of the patients is depicted in Table 1.

Three most common conditions observed were tinea (15.25%), acne (12.36%), drug induced cutaneous reactions (10.11%). Detailed pattern of skin diseases observed in our study are shown in Table 2.

Table 1: Demographic profile of patients (n=500).

Age distribution		
Age in years	Frequency	Percentage (%)
Children (≤ 14 yrs)	41	8.2
Adolescents (15-19 yrs)	74	14.8
Adults (20 - 60 yrs)	359	71.8
Above 60 yrs	26	5.2
Total	500	100
Sex distribution		
Female	202	40.4
Male	298	59.6
Total	500	100

Table 2: Distribution of some common skin diseases.

Diseases	Frequency	Percentage
Tinea	95	15.25
Acne	77	12.36
Drug induced lesions	63	10.11
Psoriasis	42	6.74
Dermatitis	37	5.94
Urticaria	28	4.49
Acneform rashes	23	3.69
Miliaria	20	3.21
Pityriasis versicolor	17	2.73
Melasma	14	2.25
Pyoderma	13	2.09
Wart	11	1.77
Vitiligo	10	1.61
MPB *	10	1.61
Furuncle	08	1.28
Herpes zoster	08	1.28
Lichen planus	07	1.12
Folliculitis	07	1.12
Hyperpigmentation	07	1.12
Eczema	06	0.96
Lichen simplex	06	0.96
Candidiasis	06	0.96
PMLE #	06	0.96
Hansen's disease	06	0.96
Impetigo	05	0.80
Keloid	05	0.80
Xerosis	04	0.64
Alopecia areata	04	0.64
Striae	04	0.64

* MPB- male pattern baldness

PMLE - polymorphic light eruptions

Antifungals (19.4%), Antibiotics (17.6%), Antihistamines (15.9%) and Corticosteroids (9.4%) were the most common class of drugs prescribed in our hospital (Table 3).

The commonly prescribed antifungals were terbinafine, ketoconazole, sertaconazole, fluconazole, itraconazole and miconazole, while the common antibacterials

prescribed were clindamycin, azithromycin, nadifloxacin, cefpodoxime, fusidic acid, neomycin, doxycycline and linezolid.

Table 3: Common categories of drugs prescribed (n=2076 drugs).

Drug groups	No. of drugs prescribed	Percentage of total drugs prescribed (%)
Antifungals	403	19.4
Antibiotics	360	17.6
H1 antihistaminics	330	15.9
Corticosteroids	195	9.4
Antiacne	161	7.8
Adsorbants and protectives	60	2.9
Keratolytics	57	2.7
Proton pump inhibitors	46	2.2
Antipsoriasis	45	2.2
Anthelmintics	34	1.6
Antiemetics	34	1.6
NSAIDs	33	1.6
Astringents	26	1.3
Ectoparasiticides	21	1.0
Moisturizers	17	0.8
Vasodilators	15	0.7
H2 blockers	15	0.7
Anticancer drugs	15	0.7
Phenol	14	0.7
Chelating agents	13	0.6
Glycosides	13	0.6

The common NSAIDs used were aceclofenac and paracetamol.

H1antihistamines commonly prescribed were levocetirizine, hydroxyzine, fexofenadine and loratadine whereas the only H2 blocker used was ranitidine. Rabepazole and esomeprazole were the most frequently used proton pump inhibitors.

Topical corticosteroids (glucocorticoids) commonly employed were betamethasone, clobetasol, mometasone, halobetasol, beclomethasone, halometasone.

The common insecticide chosen for scabies was permethrin topically.

Table 4: Various dosage forms prescribed.

Dosage forms	Frequency	Percentage
Topical	976	51.2
Oral	912	47.8
Parenteral	19	01
Total	1907	100

Details of various dosage forms prescribed are shown in Table 4.

DISCUSSION

The pattern of skin diseases in India is influenced by the developing economy, level of literacy, social backwardness, varied climate, industrialization, access to primary health care, and different religious, ritual and cultural factors 1.

It has been shown that relatively minor skin complaints often cause more anguish than more serious medical problems. The high prevalence rate and moderate morbidity makes the skin diseases very important from public health point of view.⁵ The factors associated with high prevalence of skin diseases include low socioeconomic status, malnutrition, overcrowding, and poor standards of hygiene.⁶

Our study showed male preponderance for dermatological diseases which is similar to study by Dayal et al but different from studies by Kuruvilla et al, Yuwnate AH et al, Joel JJ et al.^{2,7-9}

The most common disease pattern seen in patients attending the dermatology OPD of CSSH, Subharti, Meerut was primarily tinea 15.25% followed by acne 12.36%, drug induced cutaneous changes 10.11%, psoriasis 6.74%, dermatitis 5.94%.

Our results are different from various studies conducted by Das KK et al who reported eczema (23.10%), pyoderma (14.29%), fungal infection (14.24%) and psoriasis (5.77%) as the major skin diseases, Narwane et al. in Mumbai reported pyoderma (19%), scabies (11%), eczema (8%), tinea (5.5%) and dermatitis (7.5%) as most common skin ailments while Devi B and Zamzachin G in a study conducted in Imphal reported eczema (23.10%), pyoderma (14.29%), fungal infection (14.24%) and psoriasis (5.77%) as the major skin diseases.¹⁰⁻¹²

In our study, drug induced lesions were third most common dermatological ailment for which individuals sought medical help. Corticosteroid was most common drug implicated in cutaneous adverse drug reactions causing most frequently acne/ acneform eruptions, followed by inflammatory striae, steroid abuse. One case of steroid induced rosacea was also reported. Our results are similar to findings of Ambika H et al as well Brar K et al who also reported acne form lesions as commonest side effect of topical steroid use.^{13,14} Bhat YJ et al observed more rosacea than acne.¹⁵

One case of phenytoin induced Stevens Johnson syndrome was also reported.

In the 500 prescriptions analyzed, the total number of drugs prescribed was 2076 with average number of drugs/prescriptions being 4.1. This number is very much

higher than the recommended limit of 2.0 by WHO and also from studies done by Yuwante et al (2.43), Maini R et al (2.6), Thawani et al (2.26), Sweileh WM et al (3.06) and Minocha et al (3.36).^{4,9,16-19}

Dosage forms prescribed were mostly topical (51.2%) in the form of ointments, creams, lotions, shampoo, powders. This finding supports the use of topical preparation for treating skin disease as they have site specific action, less systemic absorption resulting in fewer side effects and convenient for patient use. This was followed by oral forms (47.8%) in the form of tablets, capsules, syrups. Injectables used were only 1% given mainly intramuscularly, intralesionally or subcutaneously. This was comparable with the other Indian study by Sumana MH et al where topical dosage forms prescribed were 49.73% followed by oral - 43.38%, however in their study injectable used were high i.e. 6.87%.²⁰

Antifungals, 19.4% top the list of common categories of drugs prescribed and was given mainly through the topical and/or oral route. Among the antifungals terbinafine was prescribed the most (5.74%). This finding is different from studies by Yuwante et al and Minocha et al where fluconazole was most common antifungal used.^{9,16}

Antibiotics prescribed were 17.6% of the total drugs. Common antibiotics prescribed were clindamycin 5.02% followed by azithromycin 2.81%, nadifloxacin 2.68% and cefpodoxime 2.04%. More than one antibiotic was prescribed in only 4.25% of the cases but they belonged to oral and topical dosage forms which are justified.

Antihistaminics were third common (15.9%) drugs prescribed. Among the antihistaminics, levocetirizine was prescribed the most common drug (11.19%).

Corticosteroids were prescribed in 9.4% of prescriptions and betamethasone 1.74% was the most preferred corticosteroids.

Our results are different from results of Joel J.J. et al² and Thawani et al where the commonly prescribed drugs for skin diseases were antihistamines (25.6%) followed by antifungals (24.5%), antibiotics (15%) and corticosteroids (12.5%).¹⁵ Minocha et al reported use of antibiotics more than corticosteroids.¹⁶

Our results are comparable to that of Yuwante AH et al and Sweileh WM et al where antifungals were most commonly prescribed drugs followed by antibiotics, antihistaminics and corticosteroids.^{4,9}

Polypharmacy (≥ 4 drugs in a prescription) was clearly visible in our study. 30.6% of prescriptions had four drugs, 14.8% had five and 7.6% of prescriptions had six drugs prescribed in them. This was higher than the study of Sharif S I et al²¹ where inclusion of four or more drug

items in the same prescription was observed in 16% of cases. The practice of polypharmacy in our study can be explained by presence of more than one disease at the time of consultation. Polypharmacy is a very common practice now a days as has been reported by various studies.^{22, 23} It is of concern in those patients with various co-morbidities as it increases the chances of drug interactions and should be discouraged.

CONCLUSION

Our study has clearly defined the different types of skin diseases among the patients attending the dermatology OPD of CSSH, Subharti Medical College, Meerut. The study represents a rough estimate of the incidence of skin disease of this area. The majority of the patients fall under the adult (20-60 years) category - 71.8%. We found that skin diseases such as tinea (15.25%) and acne (12.36%) were more common in this region. Antifungals (19.4%), Antibiotics (17.6%), Antihistaminics (15.9%) and Corticosteroids (9.4%) were the most common class of drugs prescribed in our hospital. Drugs were most commonly prescribed in topical dosage forms (51.2%) as should be the case. Number of drugs/prescription was much higher (4.1) than the recommended limit of 2 approved by WHO and practice of polypharmacy was also commonly seen. Steroid induced skin lesions on face were third most common condition seen in our hospital as individuals misuse topical steroid as fairness cream, for treatment of acne, pigmentation, and other dermatoses of skin. Public education is essential to discourage this practice.

ACKNOWLEDGMENTS

We would like to thank Dr. Abhishek Bhardwaj for his invaluable help.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee of Subharti Medical College

REFERENCES

1. Grover S, Ranyal KR, Bedi KM. A cross section of skin diseases in rural Allahabad. *Indian J Dermatol.* 2008;53(4):179-81.
2. Joel JJ, Jose N, Shastry CS. Patterns of Skin Disease and Prescribing Trends in Rural India. *Sch. Acad. J. Pharm.* 2013;2(4):304-9.
3. Lee A, Thompson J. Drug induced skin reactions. *Adverse Drug Reactions*, 2nd ed. Pharmaceutical Press; 2006:125-156.
4. Sweileh WM. Audit of prescribing practices of topical corticosteroids in outpatient dermatology clinics in north Palestine. *Eastern Mediterranean Health Journal.* 2006;12(1):161-9.

5. Dogra S, Kumar B. Epidemiology of skin diseases in school children: A study from Northern India. *Pediatr Dermatol.* 2003;20:470-3.
6. Rao C, Rao R. A Cross-Sectional Study of Dermatological Problems among Differently-Abled Children. *Indian J Dermatol.* 2012;57(1):35-7.
7. Dayal SG, Gupta GP. A cross section of skin diseases in Bundelkhand region, UP. *Indian J Dermatol Venereol Leprol.* 1977;43:258-61.
8. Kuruvilla M, Sridhar KS, Kumar P. Pattern of skin diseases in Bantwal Taluq, Dakshina Kannada. *Indian J Dermatol Venereol Leprol.* 2000;66:247-8.
9. Yuwnate AH, Chandane RD, Giri KR. A multicenter pharmacoepidemiological study of dermatological disorders in Wardha district. *Int J Basic Clin Pharmacol.* 2013;2:751-6.
10. Das KK. Pattern of dermatological diseases in Guwahati Medical College and hospital Guwahati. *Indian J Dermatol Venereol Leprol.* 2003;69:16-8.
11. Narwane SP, Patel TC, Shetty YC. Drug Utilization and Cost Analysis for Common Skin Diseases in Dermatology OPD of an Indian Tertiary Care Hospital- A prescription survey. *BJPR.* 2011;1(1):9-18.
12. Devi B, Zamzachin G. Pattern of skin diseases in Imphal. *Indian J Dermatol.* 2006;51:149-50.
13. Hariharasubramony A, Sujatha CV, Yadalla H, Nithya R, Babu AR. Topical corticosteroid abuse on the face: a prospective, study on outpatients of dermatology. *Our Dermatol Online.* 2014;5(1):5-8.
14. Kaur BB, Nidhi K, Kaur BS. Topical corticosteroid abuse on face: A clinical, prospective study. *Our Dermatol Online.* 2015;6(4):407-10.
15. Bhat YJ, Manzoor S, Qayoom S. Steroid-induced rosacea: a clinical study of 200 patients. *Indian J Dermatol.* 2011;56:30-2.
16. WHO. How to investigate drug use in health facilities: Selected drug use indicators. Geneva: World Health Organization. WHO/DAP. 1993;1:1-87.
17. Maini R. Drug utilization study in dermatology in a tertiary hospital in Delhi. *Indian Journal of Physiology and pharmacology.* 2002;46(1):107-10.
18. Thawani VR, Motghare VM, Dani AD. Therapeutic audit of dermatological prescription. *Ind J Dermatol.* 1995;40(1):13-9.
19. Minocha KB, Bajaj S, Gupta K. A clinico-pharmacological study of outpatient prescribing pattern of dermatological drugs in Indian tertiary Hospital. *Indian J Pharmacol.* 2002;32:384-5.
20. Sumana MH, Shetti SA. Prescription analysis of drugs used in outpatient department of dermatology at tertiary care hospital. *Asian Journal of Biomedical and Pharmaceutical Sciences.* 2015;5(46):22-4.
21. Sharif SI, Nassar AH, Al-Hamami FK. Trends of Pediatric Outpatients Prescribing in Umm Al Quwain, United Arab Emirates. *Pharmacology and Pharmacy.* 2015; 6, 9-16. Available from: <http://dx.doi.org/10.4236/pp.2015.61002>
22. Patel V, Vaidya R, Naik D. Irrational drug use in India. *J Postgrad Med.* 2005;51:9-12.
23. Vengurlekar S, Shukla P, Patidar P. Prescribing pattern of antidiabetic drugs in Indore city hospital. *Indian J Pharm Sci.* 2008;70:637-40.

Cite this article as: Gupta S, Khan W, Krishna A. Pattern of skin diseases and common drugs prescribed in dermatology OPD of an Indian tertiary care hospital. *Int J Basic Clin Pharmacol* 2017;6:203-7.