

Pattern of inpatient referrals to dermatology at a tertiary care centre of South Rajasthan

Abstract

Background: Dermatologists besides providing service to patients in the outdoors, also play a vital role in the care of inpatients admitted to dermatology unit and other departments. **Aims:** The aim of this study was to evaluate the pattern of referrals sent to the dermatology department by other departments. **Materials and Methods:** The study included all inpatients referred to dermatology department of a tertiary care centre of South Rajasthan during a 5-year period from October 2008 to September 2013. **Results:** A total of 1560 consultations with 1603 diagnoses were recorded. Most (770; 49.3%) consultations were received from internal medicine, followed by surgery (177; 11.3%), pediatrics (104; 6.7%), psychiatry (86; 5.5%) and gynecology (69; 4.4%) wards. Infectious skin diseases were most common (29.7%) followed by eczema (12.0%) and drug reactions (9.0%). **Conclusion:** Dermatology referrals can enhance the dermatological knowledge of non-dermatologists to diagnose and manage common dermatoses thus improving overall patient care.

Key Words: Dermatology education, skin diseases, referral pattern

Introduction

The knowledge of dermatology among non-dermatologists is believed to be very poor.^[1-4] Patients admitted to non-dermatology units may often have numerous skin lesions besides the systemic disease for which they are hospitalized.^[4,5] The dermatoses may be associated with significant morbidity and at times mortality.^[6] These dermatology lesions could be detected as a coincidental finding during examination or develop during their stay in the hospital;^[7] the development of adverse cutaneous drug reaction is a typical example of the latter. These inpatients with dermatoses often require expert dermatology consultation. The interdepartmental referral not only helps in patient care but also improves the diagnostic acumen and clinical knowledge of the clinician.^[5,7-10]

This study was conducted to determine the pattern of “inpatient referrals” to dermatology department among patients admitted in other wards at a tertiary care teaching institute of South Rajasthan.

Material and Methods

This study was carried out at the tertiary care teaching institute of South Rajasthan between October 2008 and September

2013. All the inpatients referred from non-dermatology wards to dermatology unit were initially evaluated by a dermatology resident; the case was then discussed with an attending consultant to arrive at a clinical diagnosis. In case of any diagnostic confusion, opinion of another consultant was sought. Specific investigations such as KOH examination, Gram’s smear, Tzanck smear, slit skin smear, skin biopsy, and blood and radiological investigations were undertaken in selected cases, wherever deemed appropriate to substantiate the clinical diagnosis. Referral services were also provided to nonambulatory sick patients in intensive care units or other wards. Details of the referring unit, patients’ demographic profile, primary diagnosis for which patient was admitted, provisional diagnosis of dermatoses if made by the admitting consultant, and final diagnosis of dermatoses by specialist dermatologist were recorded in a proforma for analysis and interpretation.

Results

During 5-year period, a total of 1560 referrals were received. The average number of patients seen per month was 26, with a range of 20–32. There were 968 males (62.05%) and

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592 females (37.95%), with a M:F ratio of 1.63. The mean age of the patients was 39.95 years (range: 1 day to 93 years). Majority of the patients (778; 49.9%) were in 19–45-year age group at the time of consultation [Figure 1].

The referral service of the dermatologist was sought by almost all the specialties. The referral was most frequently sought by the department of internal medicine (49.3%), thus accounting for nearly half of the total patients. This was followed by surgery (11.3%), pediatrics (6.7%), psychiatry (5.5%), and gynecology (4.4%) wards [Table 1].

A total of 1603 dermatological diagnoses were made among 1560 patients; 43 patients had more than one dermatoses. The dermatological disorders for which referrals were sought are shown in Table 2.

Infections and infestations were the most common (29.7%) cause of referral and included fungal infections (160; 10.0%), viral infections (136; 8.6%), bacterial infections (83; 5.2%), parasitic infestations (81; 5.1%), and mycobacterial infections (16; 1.0%) [Figure 2]. This was followed by eczema (12.0%) and drug reactions (9.0%). The most common types of drug reactions were maculopapular rash, Stevens Johnson syndrome, and erythema multiforme. The most common incriminating drugs were carbamazepine, phenytoin, and nevirapine.

Skin infections were the most common indication for referral by ophthalmology (55%), psychiatry (47.7%), and endocrinology (42.3%). Eczemas were the most common reason for referral by neurology (27.6%), cancer (20.0%), nephrology (18.1%), and endocrinology (17.3%). Drug reactions were the most common indication for referral by nephrology (31.8%), intensive care units (14.3%), otorhinolaryngology (11.9%), and medicine (11.7%).

Diabetes, human immunodeficiency virus, and tuberculosis were some of the associated comorbidities seen in 25, 12, and 10 patients, respectively. These patients presented with infective skin disorders, and drug reactions mainly.

Biopsy was done in 72 patients to substantiate the clinical diagnosis. These patients included Hansen’s disease (28), connective tissue disease (16), immunobullous disorders (14), vasculitis (10), and miscellaneous conditions (4).

Discussion

Mucocutaneous manifestations are often important markers for diseases of internal organs.^[5] Only a few studies have highlighted the role of dermatologists in providing referral services to other departments.

Table 1: Distribution of interdepartmental consultations

Department	Male	Female	Total	
			No	%
Medicine	505	265	770	49.3
Surgery	131	46	177	11.3
Pediatrics	64	40	104	6.7
Psychiatry	49	37	86	5.5
Gynecology	0	69	69	4.4
Otorhinolaryngology	44	23	67	4.3
Endocrinology	22	30	52	3.3
Pulmonary medicine	34	14	48	3.1
Neurology	17	12	29	1.9
ICCU*/ICU†	19	9	28	1.8
Orthopedics	18	10	28	1.8
Nephrology	17	5	22	1.4
Cancer	8	12	20	1.3
Ophthalmology	14	6	20	1.3
Cardiology	13	6	19	1.2
Gastroenterology	5	4	9	0.6
Isolation	2	1	3	0.2
Neurosurgery	2	2	4	0.3
Burn	3	0	3	0.2
CTVS‡	1	1	2	0.1
Total	968	592	1560	100

*ICCU: Intensive cardiac care unit, †ICU: Intensive care unit, ‡CTVS: Cardio thoracic vascular surgery

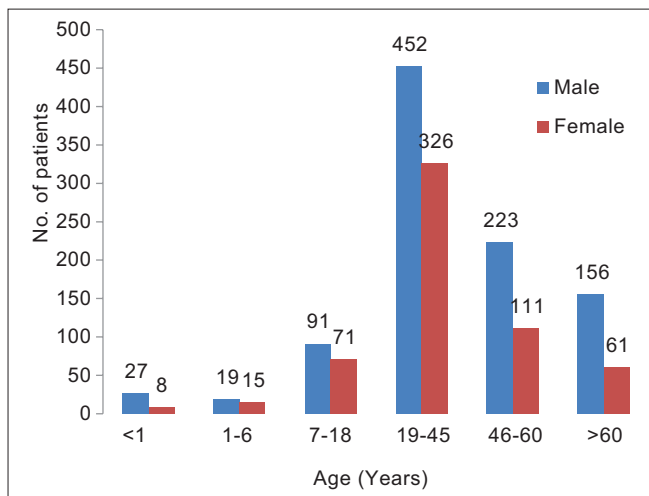


Figure 1: Age and sex distribution of patients referred to dermatologists

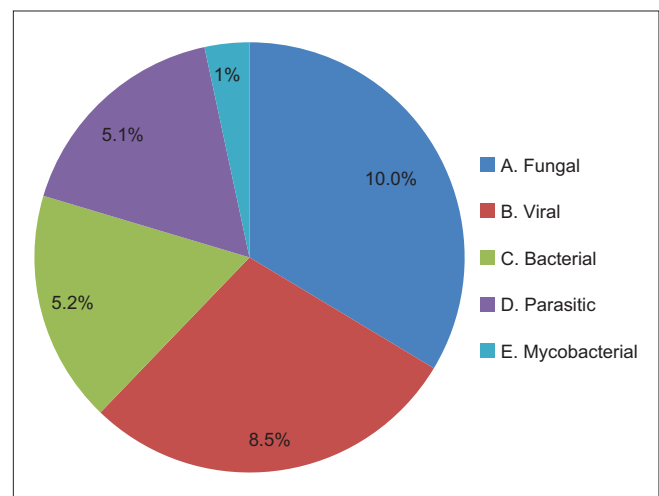


Figure 2: Pattern of infections and infestations in referred patients

Table 2: Dermatological diagnosis made in referred patients (n=1560)*

Dermatological diagnosis	n (%)
1. Infections and infestations	476 (29.7)
A. Fungal	160 (10.0)
B. Viral	136 (8.5)
C. Bacterial	83 (5.2)
D. Parasitic	81 (5.1)
E. Mycobacterial	16 (1.0)
2. Eczema	193 (12.0)
3. Drug reaction	144 (9.0)
4. Hypersensitivity	67 (4.2)
5. Connective tissue disease	52 (3.2)
6. Pruritus	45 (2.8)
7. Psoriasis	38 (2.4)
8. Purpura/ecchymosis/Petechiae	38 (2.4)
9. Vasculitis	23 (1.4)
10. Immunobullous disease	18 (1.1)
11. Disorders of sebaceous gland	12 (0.7)
12. Disorders of sweat gland	21 (1.3)
13. Pigmentary disorder	23 (1.4)
14. Nutritional disorder	20 (1.2)
15. Ulcer	16 (1.0)
16. Benign skin lesion	14 (0.9)
17. Neoplasms	11 (0.7)
18. Genodermatoses	15 (0.9)
19. Pregnancy related	8 (0.5)
20. Oral	47 (3.0)
21. Hair and nail disease	22 (1.4)
22. Sexually transmitted disease	32 (2.0)
23. Hansen's disease	43 (2.7)
24. Xerosis	28 (1.7)
25. Exfoliation/desquamation	8 (0.5)
26. Acquired ichthyosis	10 (0.6)
27. Keratodermas	13 (0.8)
28. Lymphatic malformations	6 (0.4)
29. Post herpetic neuralgia	9 (0.6)
30. Psychocutaneous disorders	6 (0.4)
31. Miscellaneous	74 (4.6)
32. Nonspecific dermatoses	71 (4.4)
Total	1603*

*43 patients had more than one dermatoses

The referral pattern from different specialties has varied in different studies possibly due to differing pattern of dermatoses seen in different regions. In the present study, internal medicine accounted for the highest proportion of dermatological consultations (49.3%), as seen in several other published studies.^[4,7,8,10-16] It is possibly due to higher admission rates in internal medicine wards compared to others. Other reasons could be longer hospital stays and more likelihood of patients having multiple ailments and hence on multiple medications.^[7] Surgery (11.3%), followed by pediatrics (6.7%) and psychiatry (5.5%) units accounted for other common referrals in the index as well as other studies.^[4,7,8,11,12,15] However, in some studies,^[10,13,14]

neurology unit has accounted for a significant number of referrals after internal medicine. In an Indian study,^[2] from Secunderabad, surgery (29.8%) and internal medicine (29.7%) departments were responsible for more than half of the referrals to dermatologists.

It is difficult to compare the pattern of dermatoses seen in the reviewed studies because the classification and quantification criteria were not uniform. However, in most of the studies,^[2,4,6,10-14,16-20] the frequent dermatological diagnoses were infections, dermatitis and drug reactions. These were the most common diagnoses observed in our study too. Infections and infestations accounted for 29.7% of the total dermatological diseases in our study. Skin infections are frequent not only in the outpatient setting but are also prevalent in inpatients probably due to immunosuppression seen in some admitted patients and a common reason for patient admission.^[14]

Before referral to the dermatology unit, a tentative dermatological diagnosis was made in 33% patients only by the referring unit, and it was found to be correct in only 20% of the patients. In another Indian study,^[2] the correct dermatological diagnosis was made in 39% of the patients. Other studies from Portugal,^[4] US,^[8] and Brazil^[14] have reported that a correct diagnosis was made in 23.9%, 48%, and 33% of the patients, respectively. Further, we noticed that the some of the common and easily diagnosable conditions such as scabies, dermatophytosis, herpes zoster, molluscum contagiosum, psoriasis, and Hansen's disease were either missed or misdiagnosed by non-dermatologists.

Drug rash, dermatophytosis, viral infections, connective tissue diseases, and Hansen's disease were the common dermatological diagnoses in patients referred from the medicine department whereas scabies, viral, and bacterial infections were commonly found in patients from the surgical wards. Scabies, dermatophytosis, and insect bite hypersensitivity were the causes of referral from psychiatrists. Approximately one-fourth (26%) of gynecological referrals were due to venereal disease research laboratory (VDRL) test positivity in a titer of <1:8, which upon further dilution and *Treponema pallidum* hemagglutination (TPHA) test, revealed it to be biological false positive test during pregnancy. Out of the total 63 patients referred to us with a primary diagnosis of Hansen's disease, a final diagnosis of Hansen's disease, after thorough evaluation, could be made in 43 patients. Out of these, 15 patients were newly diagnosed while 28 were already known cases of Hansen's either on treatment or released from treatment. Twenty patients had alternate diagnoses, such as peripheral neuropathy due to causes other than Hansen's disease.

Dermatology is primarily a visual discipline. Most dermatoses can easily be diagnosed by a trained eye without expensive investigations that are often advised by non-dermatologists. Non-dermatologists usually tend

to use combined topical preparations often containing steroids.^[5] In addition to wastage of unwanted medication, these preparations add to the cost of therapy and may also pose the risk of sensitization and side effects. Moreover, this practice leads to modification of the original clinical picture, making subsequent accurate diagnosis difficult even by a trained dermatologist, as is commonly seen with topical steroid abuse.

Conclusion

Based on the present study as well as other reported studies, we conclude that a large number of common skin ailments are either missed or misdiagnosed by non-dermatology units. These patients are at times subjected to needless investigations and unnecessary medications. This problem can, to some extent, be addressed by frequent inter-departmental referrals and interactive inter-departmental teaching and training programmes, thus providing exposure to non-dermatology residents regarding diagnosing and managing common dermatoses. In addition, an effective training of undergraduate students in dermatology should be strictly ensured and enforced according to the guidelines of medical licensing authorities.

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Conflicts of interest

There are no conflicts of interest.

References

- Feldman SR, Fleischer AB, McConnell RC. Most Common Dermatologic Problems Identified by Internists. *Arch Intern Med* 1998;158:726-30.
- Walia NS, Deb S. Dermatology referrals in the hospital setting. *Indian J Dermatol Venereol Leprol* 2004;70:285-7.
- Maza A, Berbis J, Gaudy-Marqueste C, Morand JJ, Berbis P, Grob JJ, *et al.* Evaluation of dermatology consultations in a prospective multicenter study involving a French teaching hospital. *Ann Dermatol Venereol* 2009;136:241-8.
- Fernandes IC, Velho G, Selores M. Dermatology inpatient consultation in a Portuguese university hospital. *Dermatol Online J* 2012;18:16.
- Itin PH. Dermatologic Consultations in the Hospital Ward: The Skin, an Interdisciplinary Organ. *Dermatology* 2009;219:193-4.
- Tay LK, Lee HY, Thirumoothy T, Pang SM. Dermatology referrals in an East Asian tertiary hospital: A need for inpatient medical dermatology. *Clin Exp Dermatol* 2011;36:129-34.
- Lorente-Lavirgen AI, Bernabeu-Wittel J, Pulpillo-Ruiz A, de la Torre-Garcia JM, Conejo-Mir J. Inpatient Dermatology Consultation in a Spanish Tertiary Care Hospital: A Prospective Cohort Study. *Actas Dermosifiliogr* 2013;104:148-55.
- Falanga V, Schachner LA, Rae V, Ceballos PI, González A, Liang G, *et al.* Dermatologic consultations in the hospital setting. *Arch Dermatol* 1994;130:1022-5.
- Nahass GT. Inpatient dermatology consultation. *Dermatol Clin* 2000;18:533-42.
- Fischer M, Bergert H, Marsch WC. The dermatologic consultation. *Hautarzt* 2004;55:543-8.
- Hardwick N, Saxe N. Patterns of dermatology referrals in a general hospital. *Br J Dermatol* 1986;115:167-76.
- Itin PH. Impact of a department of dermatology within the global concept of a large hospital setting - Analysis of 594 consultations requested by non-dermatologists. *Dermatology* 1999;199:76-9.
- Penate Y, Guillermo N, Melwani P, Martel R, Borrego L. Dermatologists in Hospital Wards: An 8-year Study of Dermatology Consultation. *Dermatology* 2009;219:225-31.
- Mancusi S, CyroFesta N. Inpatient dermatological consultation in university hospital. *Clinics* 2010;65:851-5.
- Arora PN, Aggarwal SK, Ramakrishnan SK. Analysis of dermatological referrals (a series of 662 cases from Baseband Army Hospital complex). *Indian J Dermatol* 1989;34:1-8.
- Storan ER, McEvoy MT, Wetter DA, el-Azhary RA, Camilleri MJ, Bridges AG, *et al.* Experience of a year of adult hospital dermatology consultations. *Int J Dermatol* 2015;54:1150-6.
- Kiellberg Larsen H, Sand C. Referral pattern of skin diseases in an acute outpatient dermatological clinic in Copenhagen. *Acta Derm Venereol* 2005;85:509-11.
- Ahmad K, Ramsay B. Analysis of inpatient dermatologic referrals: Insight into the educational needs of trainee doctors. *Ir J Med Sci* 2009;178:69-71.
- Davila M, Chrisrenson LJ, Sontheimer RD. Epidemiology and outcomes of dermatology in-patient consultations in a Midwestern U.S. university hospital. *Dermatol Online J* 2010;16:12.
- Antic M, Conen D, Itin PH. Teaching effects of dermatological consultations on non-dermatologists in the field of internal medicine. A study of 1,290 inpatients. *Dermatology* 2004;208:32-7.