

Original Research Article

Pattern of dermatology referrals in a tertiary care center in North East India

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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. The aim of the study was to evaluate the pattern of referrals sent to the dermatology department by other departments.

Methods: A retrospective study was carried out on 487 patient referrals requested to department of dermatology, of Regional institute of Medical Sciences, Imphal, Manipur for a period of 5 years from January 2005 to December 2010. The department maintains a consultation register where the demographic details, specialty requiring dermatological consultation, time frame between admission and referral request and diagnosis, investigation and treatment of the patients were entered. Patients were evaluated within few hours from the time of consultation. Procedures such as skin biopsy, fungal culture or KOH smears etc. were performed wherever required. All these information's entered in referral register were collected from register. All the patients entered in register from January 2005 to December 2010 were selected and none were excluded. Ethical approval was obtained from research ethics board. Data were entered in IBM SPSS statistics 21 for Windows (IBM Corp. 1995, 2012). Descriptive statistics such as frequency, percentages, mean with standard deviation and median were used. Analysis was done using Chi-square test to check the significance between proportion and p value<0.05 was taken as statistically significant.

Results: A total of 487 consultations were recorded. Most (48.3%) consultations were received from general medicine, followed by surgery (14.4%), gynecology (9.4%), chest medicine (5.54%) with the least from PMR (1.23%) and psychiatry (1.84%). Infectious skin diseases were most common (37.5%) followed by eczema (22.3%) and drug reactions (11%). Among infections viral infections topped the list (*Herpes simplex*- 35.9%), among eczema chronic eczematous dermatitis (22.9%). Among drug reaction severe cutaneous adverse drug reaction was present in 12 cases.

Conclusions: Dermatology referrals can enhance the dermatological knowledge of non-dermatologists to diagnose and manage common dermatoses thus improving overall patient care.

Keywords: Referral pattern, Dermatology, Infections

INTRODUCTION

Dermatology, though primarily an outpatient-based specialty, provides dermatological care to inpatients of other departments also.¹ There is a decrease in

dermatology admissions with the availability of wide range of effective as well as patient-friendly therapeutic options allowing dermatologists to treat both common and serious conditions at out-patient settings.^{2,3} The knowledge of dermatology among non-dermatologists is believed to

be very poor.⁴⁻⁷ Familiar and easy dermatoses are frequently misdiagnosed by the non-dermatology specialties requiring dermatological consultations.⁶ Undergraduate curriculum has also provided very little weightage for teaching skin diseases.⁸ Moreover, non-dermatology inpatient services are often found to have skin problems and present as a source of confusion for their admitting physicians.⁸

The aim of the study was to determine the pattern of dermatoses referred from various specialties and super specialties.

METHODS

A retrospective study was carried out on 487 patient referrals requested to department of dermatology, of Regional Institute of Medical Sciences, Imphal, Manipur for a period of 5 years from January 2005 to December 2010.

The department maintains a consultation register where the demographic details, specialty requiring dermatological consultation, time frame between admission and referral request and diagnosis, investigation and treatment of the patients were entered. Patients were evaluated within few hours from the time of consultation. Procedures such as skin biopsy, fungal culture or KOH smears etc. were performed wherever required. All these informations entered in referral register were collected from register. All the patients entered in register from January 2005 to December 2010 were selected and none were excluded. Ethical approval was obtained from research ethics board. Data were entered in IBM SPSS statistics 21 for Windows (IBM Corp. 1995, 2012).

Descriptive statistics such as frequency, percentages, mean with standard deviation and median were used. Analysis was done using Chi-square test to check the significance between proportion and p value<0.05 was taken as statistically significant. Data were entered systematically and statistical analysis were done using SPSS.

RESULTS

A total of 487 patients were analyzed. Maximum number of referrals came in the year of 2008 (24.8%) with an average of seven referrals per month. Majority belonged to age group of 31-40 years (19.5%) followed by 51-60 years (16%) (Table 1).

The age ranged from 2 day old neonate to 87 year old male. Male to female ratio was 1.01:1. Major portion of referrals came from general medicine (48.3%) followed by surgery (14.4%) (Figure 1). More than half of the referrals came within 1 week of admission (64%).

The most common dermatosis was infections (37.5%, N=183) followed by eczema (22.3%, n= 109) (Figure 2). Among the cutaneous infections maximum were viral infections (36%) followed by fungal infections (33.8%). Herpes simplex (n=23) and herpes zoster (n=18) were the common viral infections (Figure 1 and 2).

Among fungal infections most patients had dermatophytic infection (n=36) followed by candida (n=12). Chronic eczematous dermatitis (n=25) was the major type of eczema followed by seborrheic dermatitis (n=18).

Adverse drug reactions accounted for 11% of patients (n=53) the most common being morbiliform exanthematous rash (n=27) and severe reactions in the form of Steven Johnson Syndrome (SJS) (n=9) (Figure 3) and toxic epidermal necrolysis (TEN) (n=3) (Figure 4) were seen. Only 4% of the total referrals were connective tissue disorders and pregnancy dermatoses cases were few.

The pattern of dermatoses is listed in Table 2.

Investigations to substantiate the diagnosis were performed in 14.9% cases. Skin biopsy were done in 63.01% cases and KOH scraping with fungal culture was performed in 36.98% cases. Topical treatment was prescribed in 75.3% and systemic therapy in 24.7% of cases.

Table 1: Age distribution of patients.

Age (years)	N	%
1-10	43	8.8
11-20	47	9.7
21-30	75	15.4
31-40	95	19.5
41-50	73	15.0
51-60	78	16.0
61-70	47	9.7
71-80	25	5.1
81-90	4	0.8
Total	487	100.0

Table 2: Final dermatological diagnosis.

Final dermatological diagnosis	N	%
Cutaneous infections	183	37.6
Viral	66	36
Herpes simplex	23	35.9
Herpes zoster	18	28.1
Varicella zoster	5	7.8
Verruca vulgaris	5	7.8
Viral exanthem	15	22.7
Bacterial	17	9.3
Pyoderma	7	41.1
Folliculitis	7	41.1
Impetigo	4	23.5
SSSS	1	5.9
Fungal	62	33.9
Dermatophyte	36	58.1
Candida	12	19.3
Pityriasis versicolor	8	12.9
Onychomycosis	5	8.1
Parasite scabies	38	20.8
Eczema	109	22.3
Chronic eczematous dermatitis	25	22.9
Seborrheic dermatitis	18	16.5
Atopic dermatitis	15	13.7
Irritant contact dermatitis	10	9.17
Allergic contact dermatitis	8	7.33
Chronic actinic dermatitis	5	4.6
Senile xerosis	16	14.8
Asteotic eczema	4	3.7
Pompholyx	8	7.34
Inflammatory dermatoses		
Psoriasis	33	6.77
Vitiligo	16	48
Lichen planus	5	15.15
IBR	6	18.18
Adverse drug reaction	53	11
Morbiliiform	27	50.9
Erythema multiforme	7	13.2
SJS	9	16.9
TEN	3	5.6
Fixed drug reaction	7	13.2
Pregnancy dermatoses	4	0.8
Polymorphic eruption of pregnancy	2	50
Atopic eruption of pregnancy	2	50
Miscellaneous	105	21.5
Systemic sclerosis	2	1.9
Systemic lupus erythematosus	18	17.1
Keloid	2	1.9
Nevus	5	4.7
Vasculitis	16	15.2
Nonspecific dermatitis	12	11.4
Generalized pruritus	8	7.6
Urticaria	10	9.5
Miliarial dermatitis	32	30.5

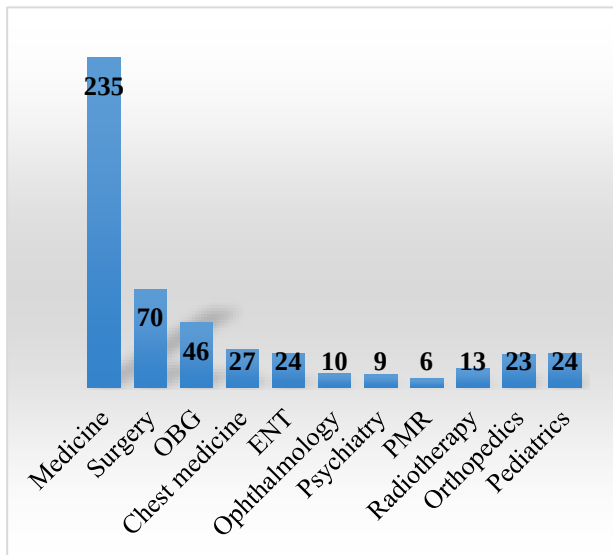


Figure 1: Graph showing distribution of interdepartmental consultations.

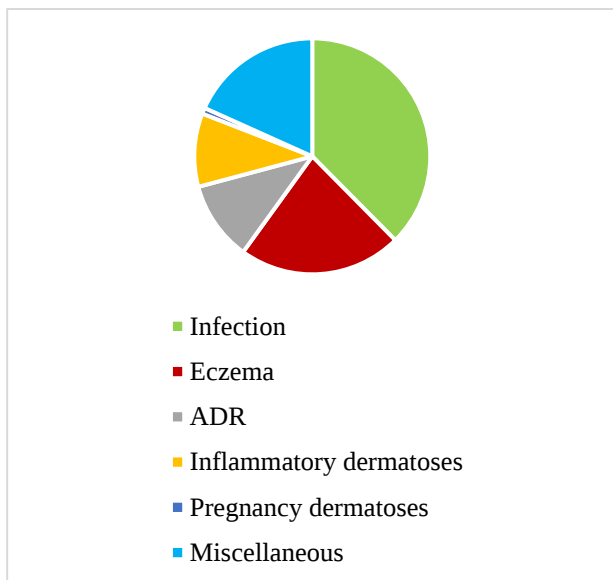


Figure 2: Distribution of dermatological diagnosis of referrals.



Figure 3: Herpes zoster.



Figure 4: Herpes simplex.



Figure 5: Toxic epidermal necrolysis.



Figure 6: Steven Johnsons syndrome.

DISCUSSION

Dermatology consultation plays an important role within the hospital setting. Many dermatological diseases might be directly or indirectly associated with the primary diseases for which the patient was admitted in the hospital or it may also be the dermatological manifestation of systemic diseases.^{9,10} A myriad of factors like whether the hospital is a tertiary care center with post graduate training

and percentage of bed allocation to departments determine the type and number of referrals.⁹

Majority of dermatological consultations were for patients belonging to age group 31-40 years which was similar to other studies.^{8,10-12} Slight male preponderance was seen in the present study unlike other studies in which there was a definite male preponderance.^{8,10,12} Whereas study by Mansuci et al showed a definite female preponderance in referral pattern.³

Majority of consultations came from department of general medicine (48.3%). This is in accordance with most of the available literature.^{3,4,7,8,10,12-22} Many medical disorders are associated with dermatological manifestations which serve as important clues for diagnosis of the underlying medical conditions. Other reasons include increased patient admissions in medicine, longer hospital stay, multiple diseases and polypharmacy thereby increasing the risk of adverse drug reaction and concurrent infections. In certain circumstances, the revised treatment of some diseases like SJS, TEN and connective tissue diseases provided by dermatologists has made a significant difference and positively modified the prognosis of disease. Surgery with 14.4% was the second most common referrals received parallel to other studies.^{13-15,17,20} Psychiatry department had the least number of referral which was in variance to other studies.^{10,23,24} This may be due to fewer admissions in psychiatry department and ignorance of patients towards dermatological issues.

Among dermatological diagnosis, infections were the most common followed by eczema which was similar to other studies.^{3,4,10-13,17,19-22,24-26} Viral infections were most common than fungal infections which was similar to the study by Sharma et al.¹⁹ Immunosuppression in admitted patients may be the reason for infections. Study by Fischer et al had candidiasis as the most common infection overall where as in present study it was the second common fungal infection next to dermatophyte.²⁷ The reason for eczematous dermatitis may be that upon hospital admission, patient is confined to a bed and is exposed to sweating, antiseptics, dressing occlusions, diapers and monitoring with catheters or pressure tubes.²⁸ Adverse drug reaction accounted for 11% of cases in the present study. Among the 3 cases of TEN, ceftriaxone was the culprit drug in one case and antiepileptics in other two. Diagnosis of any dermatitis which helps in ruling out a drug reaction is important to the patient as it helps in unnecessary change in the prescribed treatment.¹⁶

Most number of referrals were obtained within first 1 week of admission. This observation indicate that most consultations were related to complaints that had occurred before admission and would have been resolved in the outpatient setting if the patient had done a dermatological consultation. The number of diagnostic tests requested by dermatology in referred patients varied widely among different studies, ranging from 14.9% in present study to 48% in Mancusi et al and 34.6% in Falanga et al.^{3,16} Skin

biopsy accounted for 63.01% of them in current study unlike study done by Raikar et al with 12.4% cases.⁸ Just like other studies 80% cases required no follow up after discharge from hospital.^{3,9,27} This suggests that most complaints corresponded to common diseases for which a clinical diagnosis was sufficient to enable treatment by the referring physician. Viral exanthems got confused with drug rash in most of the referrals. This may led to unnecessary medications and complications in the patient. Hence, non-dermatologists should be trained and educated at least about the common dermatoses and should be stressed upon early dermatological referrals. This is very much needed in cases of adverse drug reactions as immediate suspicion and withdrawal of drug is of utmost importance. Non-dermatologists usually tend to use combined topical preparations often containing steroids.¹³ These practices add on to the increased cost and wastage of medication and 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. The consultation is made because the requesting doctor cannot manage the dermatological issue, which is the responsibility of our specialty. Dermatological referrals can offer a quality treatment to the patients and an eye opener to other specialty doctors as dermatological illness many a times can also be a manifestation of systemic illnesses.

Limitation

Some final diagnosis and diagnostic test results, which were delivered after discharge, have not been recorded.

CONCLUSION

Dermatological conditions ranged from minor to life threatening dermatoses in the present study. The pattern recognized in the study will help to sensitize the respective clinicians regarding the commonly occurring dermatoses in their respective fields. A proper dermatological evaluation aids in the diagnosis and management of several conditions and may make the treatment less time-consuming and more cost effective. Non-dermatologists often fail to diagnose even common dermatological disorders causing error or delay in diagnosis and initiation of appropriate treatment. So a prompt training should be provided right from the undergraduate level to diagnose simple cutaneous disorders.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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