

Original Research Article

Study of cross-referrals to the dermatology department in an inpatient setting at a tertiary care centre

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ABSTRACT

Background: Till recently, dermatology was primarily being considered to be an outpatient focused discipline. However, several inpatient admissions to other specialties require dermatologic consultation for optimum management. This study was conducted to analyse the incidence and indications for inpatient dermatology referrals and the impact of dermatology consultation on patient management.

Methods: A cross-sectional study was undertaken by analyzing the records of 243 patients referred to dermatology department over a 2-year period. Descriptive analysis was conducted in the form of study of presumptive diagnoses by the referring clinicians, causes of referral, distribution of referrals across specialties and the dermatological opinions with respect to diagnosis and management etc.

Results: Clinically significant change was documented in the course of skin lesions management of almost two-thirds of referred patients. Maximum referrals were from the department of general medicine with “skin rash” being the most common cause for seeking 2nd opinion. Concordance for diagnosis between the referring clinician and the dermatologist was observed in only 30.2% of the cases.

Conclusions: Dermatologic referral does lead to improved patient care. But there is need for better training of non-dermatologists enabling them to recognize and treat common skin lesions.

Keywords: Cross-referrals, Dermatology, In-patient, Tertiary care

INTRODUCTION

Over years, the role of dermatologists has been largely seen to be restricted to treating the outpatients only. With the decline in direct admissions to dermatology services, dermatology inpatient care is provided more often in the consultative setting and can directly impact accurate diagnosis and management of patients.^{1,2} The knowledge of dermatology among non-dermatologists is believed to be very poor.³⁻⁵ Further, with increased focus on specialization in health care, dermatologists are being

asked more and more to provide opinion on inpatients admitted under other specialities across different levels of health care.^{1,2}

The dermatology lesions in such inpatients could be detected as a coincidental finding during examination or develop during their stay in the hospital; the development of adverse cutaneous drug reaction being one typical example of the latter.⁶ Approximately 20% of the general population have been shown to have skin diseases that are treated by local or systemic therapies, and therefore, it seems clear that

inpatients would suffer numerous skin complaints regardless of the disease that led to hospitalization and at times require dermatologist opinion.⁷ Suffice to say that, the interdepartmental referral may not only help in patient care but also improve the diagnostic acumen and clinical knowledge of the clinician.

In spite of the important role played by dermatologists in indoor patient management, there is a relative dearth of literature regarding this issue, especially in India. The present study was undertaken to analyze the incidence and reasons for inpatient dermatology referrals and the impact of dermatology consultation on patient management.

METHODS

The present study was started after ethics committee approval was obtained from the institutional ethics committee. This was a cross-sectional descriptive study conducted at a tertiary care centre in central India over two years (November 2017-October 2019). Data and records of all the inpatients referred from various specialities to dermatology department for opinion/consultation during the study period were studied and analyzed. Following selection criteria were followed:

Inclusion criteria

- Patients of any age/both sexes with skin lesion(s) at any site.
- The patient to have been admitted for primary non-dermatological indication.
- Referral for dermatologist opinion/consultation only.

Exclusion criteria

- Patients being transferred from other department to dermatology department.
- Patients with lesions due to trauma of any kind.
- Patients refusing to give consent.

All the patients fulfilling above criteria were recruited for the study after obtaining requisite written informed consent from them. All the relevant history, including but not limited to socio-demographic details, frequency of referrals made by different specialities and causes of referrals (presumptive diagnoses made by non-dermatologists) were duly noted. All the study patients were examined within 24 hours of referral. The dermatologist examining the patient was blind to the findings of the referring doctor. Comparison of the non-dermatologist’s and dermatologist’s diagnoses was undertaken. Finally, the impact of dermatologist referral was studied in terms of change in diagnosis, additional investigations and change in treatment plan or transfer of the patient to skin ward etc.

Comparisons were drawn using Chi-square test and unpaired t-test with the p-value of <0.05 being considered

statistically significant. Statistical analyses were conducted using SPSS (version 17).

RESULTS

Data of a total of 243 patients were analyzed as part of the study. The mean age of the patients was 34.3±16.4 years. Majority (87.3%) of the dermatological consultations were sought for patients >18 years, with 30.8% patients being above 45 years of age. The gender distribution was even (1:1). General Medicine accounted for two third of the total dermatological referrals (161 cases, 66.3%), followed by the department of orthopaedics (26 cases, 10.7%) and department of surgery (16 cases, 6.6%). The emergency department accounted for the least number of in-house dermatologic consultations (2 cases, 0.8%). The different specialties requesting dermatology consultation have been tabulated in Table 1.

Table 1: Specialty-wise distribution of inpatients referred for dermatological consultation.

Referring speciality	Number of patients	Percentage (n=243)
Internal medicine	161	66.3
Orthopaedics	26	10.7
General surgery	16	6.6
Paediatrics	11	4.5
Pulmonary medicine	9	3.7
Obstetrics and gynaecology	8	3.3
Psychiatry	6	2.5
Ophthalm/ent	4	1.6
Er/casualty	2	0.8
Total	243	100

Table 2: Dermatological diagnoses by the referring departments.

Primary indication for referral	Number of patients	Percentage (n=243)
Skin rash	65	26.7
Skin infections	42	17.3
Eczema/dermatitis	39	16.0
Suspected drug reaction	19	7.8
Connective tissue disorder	13	5.3
Immunobullous disorder	11	4.6
Oral lesions	10	4.1
Purpuric rash/vasculitis	8	3.4
Chronic skin ulcer	6	2.5
Urticaria	6	2.5
Skin pigmentation	5	2.1
Acneiform eruption	5	2.1
Skin swelling	4	1.6
Leprosy	4	1.6
Gangrene	3	1.2
Others	3	1.2
Total	243	100

Unspecified “skin rash” was the most common dermatologic condition, for which skin referral was sought (65 cases, 26.7%) followed by skin infections (42 cases, 17.3%), eczema/dermatitis (39 cases, 16.0%) and suspected drug reactions (19 cases, 7.8%). “Skin swelling,” leprosy, gangrene, miliaria, hair and nail disorders accounted for <5 cases each. “Fungal infections” accounted for almost half (45.24%) of the infective group.

All these diagnoses were made by the respective referring department and mentioned on the patient file as part of referral call. The different indications for which referrals were sought are tabulated in table 2. Patients, at times, were referred with more than one dermatological

condition, but only primary indication for referral was considered (Table 2).

The different diagnoses made by the dermatologists after examining the referred patients have been tabulated in table 3. Cutaneous infection was the most commonly diagnosed condition (35.3%), followed by drug reactions (12.8%) and eczema/dermatitis (8.6%). Among the cutaneous infections, viral infections (12.76%) occurred most frequently, closely followed by fungal infections (11.52%). Some dermatological conditions such as lichen planus, cutaneous sarcoidosis, pigmentary disorders, deficiency dermatoses, rosacea, telogen effluvium, striae, and senile comedones were found to be least common accounting for <3 cases each.

Table 3: Final diagnoses made by dermatologists.

Final dermatological diagnosis	No. of patients	Percentage
Cutaneous infections-		
-Bacterial infections (pyogenic infections, leprosy, cutaneous TB etc.)	19	7.9
-Fungal infections (tinea, candidiasis, pityriasis versicolor etc.)	28	11.5
-Viral infections (herpes, exanthema, dengue etc.)	31	12.8
-Parasitic infections (scabies)	7	2.9
Non-severe cutaneous adverse reaction (morbilliform rash, FDE etc)	16	6.6
Severe cutaneous adverse reaction (SJS, TEN, DRESS)	15	6.2
Eczema/dermatitis (allergic contact, irritant contact, seborrheic, atopic)	21	8.6
Connective tissue disorder (lupus erythematosus, dermatomyositis etc.)	15	6.2
Vasculitis (small/medium/large vessels)	10	4.1
Oral lesions (lichen planus, candidiasis, aphthous ulcer etc.)	10	4.1
Other conditions-		
-Miliaria	10	4.1
-Psoriasis	9	3.7
-Ichthyosis/xerosis	6	2.5
-Urticaria	5	2.1
-Acne	5	2.1
-Erythema nodosum	4	1.6
-Leg ulcer	4	1.6
-Peripheral gangrene	4	1.6
-Prurigo	3	1.2
Miscellaneous (<3 cases each) (lichen planus, cutaneous sarcoidosis, pigmentary disorder, deficiency dermatosis, rosacea, telogen effluvium, striae, senile comedones etc.)	21	8.6
Total	243	100

*TB- Tuberculosis, FDE- Fixed drug eruption, SJS- Steven Johnson syndrome, TEN- Toxic epidermal necrolysis, DRESS- Drug reaction with eosinophilia and systemic symptoms

The referring clinicians could correctly mention the category of skin disorders in 54.9% cases on the dermatology referral sheets (e.g., skin infections, immunobullous disorders), while only a vague diagnosis was provided (e.g., “skin rash”, “skin scaling”) in the remaining cases. However, an accurate diagnosis was provided only in 30.2% of the referred cases. Dermatology consultation resulted in revised diagnosis in

about 70% of instances of case referrals. An additional investigation (skin biopsy) was performed in 14.4% of the referred cases to confirm the diagnosis. Dermatologic consultation also resulted in a change and/or additional treatment in 175(72%) patients in the form of discontinuation of previous treatment and/or addition of a new topical or oral medication. A number of patients (mostly of immunobullous disorders and cutaneous

adverse drug reactions) were transferred into dermatology inpatient department for specialized care.

DISCUSSION

With the present study, the records of 243 patients admitted to various departments and referred for dermatology consultation at the study centre were analyzed. The incidence and indications for the referrals and the impact of dermatology consultations on patient management were assessed thoroughly.

Most of the dermatology consultations were sought for patients >18 years (87.3%), which is similar to the age distribution of total inpatients at the study centre and in line with a study conducted in the USA at a centre of similar hierarchy.⁸ In most of published works, males have outnumbered females while this study showed equal gender incidence.^{1,3,8} In one study though, females were observed to have outnumbered males.⁷

All the departments requested dermatology referral for inpatients, however general medicine referred maximum number of patients. This is largely in accordance with the available literature.⁸⁻¹⁰ The reason could be that many medical disorders are associated with dermatological manifestations which may serve as important clues for diagnosis of the underlying medical conditions. Only 2.5% of referrals were requested by the psychiatry department, this observation being in contrast to similar studies where psychiatry accounted for collective average of ~16% of the total referrals.^{8,11,12} This probably occurred due to fewer psychiatric admissions in hospital and indifferent approach to the dermatologic issues.

Unspecified skin rash (26.7%) accounted for maximum number of dermatology referrals, followed by cutaneous infections (17.3%) and cutaneous scaling and eczema (16.0%). Similar observations were reported by Walia et al, as well, a study conducted in strikingly similar setting.¹³ Dermatitis/eczema was responsible for 21% of dermatology consultations, followed by drug eruptions (10%) in the study conducted by Davila et al, in the USA.⁸ The difference could be due to very less incidence of cutaneous infections and the referral diagnosis of skin rash being detailed in description, rather than just mentioning it as “unspecified rash”.

The final diagnoses made by the dermatologists in the present study revealed infections (35.3%), drug reactions (12.8%), and eczema/dermatitis (8.6%) to be the most common skin disorders. Almost half of the patients referred as “skin rash” were diagnosed to be suffering from infectious disorders. The misdiagnosis of infectious disorders by the non-dermatologists is a matter of concern, as most of these conditions are contagious without proper treatment. Only half of the patients referred for eczema/dermatitis had the condition in reality, thus emphasizing the exaggerated diagnosis of

eczema or dermatitis by non-dermatologists leading to improper treatment.

Authors found that non-dermatologists could provide an accurate dermatological diagnosis only in 30.2% of cases. This rate is high when compared to another study from the USA, where the diagnostic accuracy was reported to be only 23.9% and slightly low when compared to another Indian study (39%).^{8,9} Internal medicine provided the maximum number of accurate diagnoses in both these studies, corroborative of observations from the present study.

Dermatological consultation resulted in skin biopsy in 14.4% of the referred cases to aid in diagnosis and change/additional treatment in 72% cases. This is much in line with findings of previous similar studies.⁹⁻¹³

CONCLUSION

Non-dermatologists often fail to diagnose even common dermatological disorders causing error or delay in diagnosis and initiation of appropriate treatment. 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.

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