

In patient dermatology: characteristics of patients and admissions in Tribhuvan University (TU) Teaching Hospital

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Abstract

Introduction

Inpatient dermatology has been described only in few countries. Characteristics of inpatient might be important in the evaluation of its usefulness and best use of dermatological beds for the care of the patient

Objectives

To describe inpatient activity in dermatology department of TU teaching hospital, Kathmandu, Nepal.

Methods

This was cross-sectional retrospective study in a single hospital. All patients admitted from (15th April 2008 to 14th April 2012) in the dermatological ward were taken from the admission and discharge record of the department. The data was analysed for the number of admissions, demographic profile of patients, clinical diagnosis, readmission rates, length of hospital stay and outcome

Results

There were a total of 505 admissions in a four years period. Out of this 283(56%) were new admissions and 222(44%) were readmissions. The most common diagnosis among new admissions was drug reaction (21.6%), followed by immunobullous diseases (14.5%) and connective tissue diseases (14.1%). The other most common reasons for admissions were infections, erythroderma, eczema, erythema multiforme, urticaria and vasculitis. The mean length of stay in the hospital was 6.83 ± 6.150 days. Out of 505 admissions there were 487(96.4%) discharges after improvement, 12(2.4%) cases were transferred to other wards and ICU for management. There were 4(0.8%) mortalities in this 4 years period.

Conclusion

Immunobullous diseases, connective tissue diseases, drug reactions, infections, erythroderma, eczema, psoriasis, erythema multiforme, urticaria and vasculitis were the top 10 conditions for the admission. Policy makers could take these data as evidence to allocate beds for Dermatological patients for better management of these subsets of patients.

Keywords: Inpatient dermatology, Patterns, Nepal.

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Introduction

In patient dermatology is dedicated to the evaluation and care of the most complicated or severe dermatological patients. Although dermatology is predominantly an outpatient-based specialty, subsets of patients exist for whom inpatient care is essential. The characteristic of inpatient dermatology varies from country to country. Studies on inpatient dermatology come mainly from the USA, UK and other countries like Spain and Iran. In these countries the most frequent diagnoses were psoriasis, bullous disorders, chronic ulcers and dermatitis, which represented more than 70% of inpatients.¹⁻³ In Spain surgical patients constituted the majority of inpatients (37%) whereas in Iran bullous disorders constituted around 40% cases.^{4,5} Our objectives were to describe inpatient activity in TU Teaching Hospital, a tertiary care centre of Nepal.

Methods

A retrospective analysis of admission and discharge record of inpatient of dermatology ward of TU Teaching Hospital (Kathmandu, Nepal) was done.

The four years record of patients admitted from 1st Baisakh 2065(15 th April 2008) to 31st

Chaitra 2068(14 th April 2012) was analyzed focusing mainly on the number of admissions, demographic profile of patients, clinical diagnosis, readmission rates, length of hospital stay and outcome.

Results

There were a total of 505 admissions in the dermatology ward in a four years period. Out of this 283(56%) were new admissions and 222(44%) were readmissions. Females outnumbered males with 285(56.4%) versus 220(43.6%) in total admissions and 146(51.6%) versus 137 (48.4%) and 139(62.6%) versus 83(37.4%) in new admission and readmission respectively. The mean age of the patients was 35.46 ± 18.234 years (ranging from 1 to 85 years). The commonest age group was 36-45 years with 125 admissions. Seventy admissions (13.9%) were in pediatric age group i.e. =14 years and 435(86.1%) in adult age group.

Most common diagnosis among new admissions was drug reaction (21.6%), followed by immunobullous diseases (14.5%) and connective tissue diseases (14.1%) , though readmission rate was quite high in immunobullous diseases (61.3%) and connective tissue disorders (34.7%) (Table 1).

Table 1:

Final Diagnosis	Type of admission		Total n (%)
	New admissions(n)	Readmissions(n)	
1.Immunobullous diseases	41(14.5%)	136(61.3%)	177(35%)
2. Connective tissue diseases	40(14.1%)	77((34.7%)	117(23.2%)
3. Drug reaction	61(21.6%)	3(1.4 %)	64(12.7%)
4. Infections	40(14.1%)	2(0.9%)	42(8.3%)
5. Erythroderma	29(10.2%)		29(5.7%)
6. Eczema	17(6%)		17(3.4%)
7. Psoriasis	16(5.7)	1((0.4%)	17(3.4%)
8. EM	9(3.2%)		9(1.8%)
9. Urticaria	8(2.8%)		8(1.6%)
10. Vasculitis	5(1.8%)		5(1%)
11. Others	17(6%)	3((1.3%)	20(3.9%)
Total	283(100%)	222(100%)	505(100%)

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Among the new patients of drug reactions, there were 31 cases of SJS(50.8%), 4 cases of SJS-TEN overlap (6.6%), 4 cases of TEN (6.6%), 19 cases of exanthematous drug reaction(31.1%) and 3 cases of Drug hypersensitivity syndrome (4.9%). Connective tissue disorders comprised of 27 new cases of SLE (67.5%), 9 new cases of Systemic sclerosis (22.5%), 2 cases of MCTD (5%) and single case of dermatomyositis (2.5%) and generalized morphea (2.5%) each. Pemphigus vulgaris constituted the bulk of immunobullous diseases with 25(61%) new cases whereas there were 10 new cases of pemphigus foliaceus (24.4%), 3 new cases of Bullous pemphigoid (7.3%), 2 cases of CBDC (4.9%) and one case of DH(2.4%). There were 106(59.9%) readmissions for pemphigus vulgaris. Various infections accounted for 40(14.1%) new admissions and 2 (0.9%) readmissions. Common infections were Hansen's disease (9 cases, 22.5%), deep mycosis (9 cases,22.5%), cellulitis (5,12.5% cases) and disseminated herpes zoster (5 cases,12.5%). Other infections were 2(5%) cases of staphylococcal scalded skin syndrome, 2 (5%) cases of lupus vulgaris, one case (2.5%) each of eczema herpeticum, varicella, viral exanthem, bullous impetigo, neurosyphilis, chronic HSV infection with HIV, herpes stomatitis, zygomycosis.

There were 29(5.7%) cases of erythroderma of various etiology, 17(3.4%) cases of various eczemas, 16(3.4%) cases of extensive psoriasis, 9 (1.8%)cases of erythema multiforme, 8(1.6%) cases of urticaria and 5 (1%)cases of cutaneous small vessel vasculitis. There were 3 cases of malignancies namely a case of CTCL, a case of acral lentiginous melanoma and a case of apocrine carcinoma. Other diagnoses which accounted for small number of admissions were 3 cases of non healing ulcers, 2 cases of Darrier's disease, one case each of cicatricial alopecia, erythema nodosum, Pityriasis rubra pilaris, Lichen Planus, crusted scabies, haemangioma, congenital erythropoietic porphyria, pellagra and panniculitis.

The mean length of stay in the hospital was 6.83 ± 6.150 days (ranging from 2 to 47 days). The mean duration of hospitalization for patients admitted for pulse was 3.28 ± 0.853 days whereas it was 9.27 ± 6.983 days for others. Three hundred and thirty five (66.3%) admissions had duration of hospital stay of less than 7 days and only 18 (3.6%) admissions out of 505 admissions were in hospital for more than 21 days (Table 2) Out of 505 admissions there were 487(96.4%) discharges after improvement, 12(2.4%) cases were transferred to other wards and ICU for management of other co-morbidities, 1 case

Table 2: Final diagnosis with duration of hospital stay

Final Diagnosis	Duration of hospital stay				Total
	< 7 days	7–14 days	15– 21 days	> 21 days	
1. Immunobullous diseases	146	19	6	6	177
2. Connective tissue diseases	91	21	4	1	117
3. Drug reaction	23	32	8	1	64
4. Infections	20	9	7	6	42
5. Erythroderma	11	13	4	1	29
6. Eczema	9	6	0	2	17
7. Psoriasis	6	9	2	0	17
8. EM	6	2	1	0	9
9. Urticaria	8	0	0	0	8
10. Vasculitis	4	0	0	1	5
11. Others	11	7	2	0	20

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absconded and 1 left against medical advice. There were 4(0.8%) mortalities in this 4 years period. Two out of 4 cases (50%) of Toxic Epidermal necrolysis , a case of DRESS (33.3% of all drug hypersensitivity admitted) and a case of SLE (3.7 % of all SLE) expired during the course of admission.

Discussion

Dermatology is predominantly an outpatient based specialty. The scope of outpatient care has widened with the advent of cosmetically more acceptable creams, outpatient-based day treatment, phototherapy, and the introduction of systemic immunosuppressive agents.⁶ However, inpatient treatment remains an important therapeutic option as subsets of patients exist for whom inpatient care is essential.

Five hundred and five admissions (283 new and 222 readmissions) were included in our study. There was female preponderance with 56.6% cases. The mean age of the patients was similar to that reported in a study by Jessop et al (34.1years)⁷ and lower than that reported by Hasan et al(44 years)⁵, and Hebling et al (53 years).⁸ Most common reason for admission in our study was drug reaction, which comprised 21.6% of all new admissions whereas it was 5.82% in an Iranian study.⁵ The reason behind this could be more easily available drugs over the counter and the overuse of the drugs in the community by health care worker for trivial ailments. Furthermore, SJS was the commonest reason for admission which was different than others studies where the commonest reason was exanthematous drug reactions.^{9,19} This would be explained as most of the exanthematous drug reaction are well managed on OPD basis.

The number of new admissions for connective tissue disorders and immunobullous disorders were quite high and almost same. Immunobullous disorders were second most common cause for admission in our set up whereas it was most common cause for admission in Iran⁵, fourth common cause in US⁶, and quite infrequent in Spain.⁴

As our hospital is a tertiary care centre and takes referral from all over the country, this may be the reason behind getting a bulk of cases of immunobullous disorders and connective tissue disorders. The cause of huge number of readmissions of bullous diseases and connective tissue diseases (mostly SLE) in our hospital was mainly because of Dexamethasone cyclophosphamide pulse therapy received by majority of these patients.

Admissions for infectious diseases were 8.3% in our study whereas it was 3.74% in Iran.⁵ Hansen's disease and deep mycoses were common diagnosis in our setting, while it was cellulitis in the UK and US.⁶ This is easily explained as Nepal is one of the endemic regions for Hansen's disease. Psoriasis, which was the seventh reason for admission in our hospital, is considered to be the most common disease that results in hospitalization in England, Scotland and USA.^{3,6,8} Furthermore, in Iran⁵, South Africa⁷, and Spain⁴, it accounted for the second and third reason which leads to admission, respectively.

Only three patients were admitted in our hospital for neoplasms, although in Spain, the related rate was higher.⁴ Perhaps the reason is that in our country, there are no Dermato surgeons trained to do surgery of the cancers of the skin and that these patients are referred to General surgeons or plastic surgeons. The other explanation for this could be that the prevalence of skin neoplasm itself could be lower in the country. The mean duration of admission in our study was 6.83 days and this was similar to that of the US⁶ but lower than that of the UK and Iran.⁵ Longer duration of stay was seen in our patients with immunobullous disorders. Most of these patients had severe disease and required dressing which was not possible in out patient's basis. The duration of stay was comparable to the patients of immunobullous diseases in Spain too.⁴ In addition, drug reactions and infections were also other causes of longer duration of hospital stay. Overall the clinical outcome of all admitted patients was good with only 0.8% mortality seen in total admitted patients. Mortality rates were

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50% for Toxic epidermal necrolysis , 33.3% for DRESS, and 3.7% for Acute SLE in our inpatients. These are the conditions with known high mortality and needs special care. This reflects the importance of inpatient care needed in Severe Dermatological diseases (immuno bullous diseases, TEN, DRESS and Acute SLE). Our study has elaborated the patterns and characteristics of inpatient Dermatology and their outcome in a Tertiary care centre. Though it is clear that certain Dermatological conditions require inpatient care for their optimal management, the study has not included the quality of life improvement after admissions in different Dermatological diseases. Thus a further prospective study will be required in our hospital which compares the quality of life in inpatient management with the quality of life improvement in outpatient based management. Then only concrete evidence can be generated to justify inpatient care in Dermatology.

Conclusion

The pattern of admission for dermatological diseases varies from country to country and the characteristics of patients are not well known in numerous countries. The pattern of admission in Nepal differs from other countries. The top 10 most common reasons for admission in our setting were Immunobullous diseases, connective tissue diseases, drug reactions, infections, erythroderma, eczema, psoriasis, erythema multiforme, urticaria and vasculitis. However, among the new admissions, Drug reactions were the commonest cause of admissions followed by immunobullous diseases, and connective tissue diseases. The study clearly shows the disease patterns in Dermatology that needs inpatient care and the mortality associated, though rare, with these diseases. The policymakers could use these data for allocating certain beds in the hospital for care of Dermatological patients.

References

1. Ayyalaraju RS, Finlay AY. Inpatient dermatology. United Kingdom and United States similarities: moving with the times or being relegated to the back bench? *Dermatol Clin* 2000; 18: 397-404.
2. Ferguson JA, Goldacre MJ, Newton JN, Dawber RP. An epidemiological profile of in-patient workload in dermatology. *Clin Exp Dermatol* 1992; 17:407-12.
3. Munro CS, Lowe JG, McLoone P, White MI, Hunter JA. The value of in-patient dermatology: a survey of in-patients in Scotland and northern England. *Br J Dermatol* 1999; 140:474-79.
4. Doval G, Feal C, Roson E, Torre C de la , Abalde MT, Florez A, et al. Inpatient dermatology: characteristics of patients and admissions in a Spanish hospital. *JEADV* 2002;16:334-38.
5. Hasan S, Farshad F, Negin S, Parastoo D, Farzam G. Patterns of Admissions to a Referral Skin Hospital in Iran. *Iran J Dermatol* 2008;11:156-58.
6. Ayyalaraju RS, Finlay AY , Dykes PJ, Trent JT, KirsnerRS, Kerdel FA. Hospitalization for severe skin disease improves quality of life in the United Kingdom and the United States: A comparative study. *J Am Acad Dermatol* 2003; 49:249-54.
7. Jessop S, McKenzie R, Milne J, Rapp S, Sobey G. Pattern of admissions to a tertiary dermatology unit in South Africa. *Int J Dermatol* 2002;41:568-70.
8. Helbling I, Ferguson JE, McKenna M, Muston HL. Audit of admissions to dermatology beds in Greater Manchester. *Clin Exp Dermatol* 2002; 27:519-22.
9. Ding WY, Lee CK, Choon SE. Cutaneous adverse drug reactions seen in a tertiary hospital in Johor, Malaysia. *Int J Dermatol* 2010; 49: 834-41
10. Fiszenson -Albala F, Auzevie V, Mahe E, Farinotti R, Durand Stocco C, Crickx B, et al. Epidemiology and Health Services Research A 6-month prospective survey of cutaneous drug reactions in a hospital setting. *Br J Dermatol*; 149(5): 1018-22