

Original Article

Pattern of skin diseases in the Central Iran, Yazd Province

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Abstract *Background* The pattern of skin diseases differs from region to region based on geographical, racial and cultural circumstances. For the purpose of education and reeducation of physicians, it is necessary to have knowledge of the conditions and distribution of diseases.

Objective To elicit pattern of common skin diseases in the region of Central Iran, Yazd Province.

Patients and methods Two separate descriptive studies were conducted in order to analyze the dermatoses seen in outpatients and inpatients at the Dermatology Department, Shahid Sadoughi Medical Science University, Yazd, Iran. Patient files who visited the dermatologists were reviewed. Diagnosis was coded, categorized, discussed and analyzed according to International Classification of Diseases, revision 10 (ICD-10).

Results Skin infections with 23.4% were the most common cause of referral to dermatology outpatients, followed by dermatitis 19.2%, acne 10.8%, melasma 7.8% and urticaria 5.3%. Melasma in women and psoriasis in men were significantly more common. In inpatient group skin infections were the most common 34.3%, followed by dermatitis 13.2%, drug reactions 11.2%, psoriasis 9.6% and malignant tumors. Psoriasis was significantly more common in men and viral infections (herpes zoster) in women.

Conclusion The high occurrence rate of skin infections and dermatitis in our study population requires further study in order to pinpoint its root causes. Improving the socio-economic status, environmental and personal hygiene, as well as specific instruction to the at-risk group can be beneficial.

Key words

Skin disease, pattern, central Iran, Yazd

Introduction

There are more than a thousand skin diseases that a dermatologist must be aware of. These disorders range from dried and wrinkled skin to various serious and dangerous chronic diseases.¹

Skin disease patterns vary from country to country, and even from region to region within

a country; and for the large part these cases are treated by general physicians in many countries, who occasionally refer more severe instances to specialists.

Medical education during the general medicine curriculum, as well, as specialized education and refresher courses, requires suitable planning to include scientific and specific knowledge of locally predominant diseases. Dermatology is no exception to this rule; therefore, recognition of skin diseases most prevalent in a region, their symptoms and causes, their relationship to the local climatic conditions, and proper preventative and

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treatment methods are necessary.²

The present study was undertaken to have an insight about the pattern of common skin diseases in the region of Central Iran, Yazd Province.

Patients and methods

In order to analyze the skin disease pattern in the region, two separate studies were designed to evaluate common inpatient and outpatient diseases. The first study was carried out during a three month period in the summer of 2005, as a descriptive cross-sectional type. All patients who had been referred to the Dermatology Clinic of the Medical Sciences University were analyzed. Patients were examined by a dermatologist and the final diagnoses were then categorized according to WHO International Classification of Diseases, revision 10 (ICD 10).

The second study was also a descriptive and cross-sectional study using data from all patients who were hospitalized in the province's only dermatology ward in educational hospital at the university during a two year period between 2006 and 2007. The results were categorized according to ICD-10.

The data from the two studies were analyzed and the frequency distribution of the diseases in the patients were categorized and identified in different groups.

Results

Outpatient group

A total of 1052 outpatients within the study period were divided into various groups according to **Table 1**.

Skin infections were the most common cause of patient referral to the clinic with 23.4%,

followed by dermatitis (19.2%), acne (10.8%), melasma (7.8%), urticaria and allergic reaction (5.3%), alopecia (4.6%), skin cancers (3.5%), vitiligo (2.9%), psoriasis (2.5%), lichen planus and lichenoid reactions (1.2%).

In infectious group, viral infections were the most common (8%), followed by fungal infections (6.4%), bacterial infections (5.4%) and protozoal infections (3.6%).

In dermatitis group, contact dermatitis was the most common (12.6%) followed by seborrheic dermatitis (3.6%) and atopic dermatitis (2.9%).

Gender difference in all patients was evaluated (44.1% men, 55.9% women), which was statistically significant ($p=0.000$). Melasma was most frequent in women than men (90% vs. 10%, $p=0.000$). Urticaria and urticarial reactions were mostly seen in women but it was not significant (6.3% vs. 4%, $p=0.114$). Psoriasis was twice common in men than in women (3.6% vs. 1.7%, $p=0.045$). Bacterial infections were common in males than females (7.3% vs. 3.9%, $p=0.015$). Other diseases were seen in two genders with no significant difference.

Patients were categorized in groups according to ages; in <15 year old, the most common dermatoses were infectious skin diseases followed by atopic dermatitis. In the 15-24 year group, acne and dermatitis were more commonly seen. In the 25-34 year group dermatitis, alopecia and melasma were predominant while in ≥ 35 year group contact dermatitis, alopecia and psoriasis were commonly observed.

Inpatient group

In the inpatient group; a total of 303 patients were admitted in dermatology ward in two years period which were divided into various

Table 1 The pattern of skin disease seen in dermatology clinic of Yazd University.

Condition	Male (N/%)	Female (N/%)	Total (N/%)	p value.
Infections				
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Viral	38 (8.1)	46 (7.8)	84 (8)	0.8276
Bacterial	34 (7.3)	23 (3.9)	57 (5.4)	0.0150*
Fungal	35 (7.5)	33 (5.6)	68 (6.4)	0.2060
Protozoal	16 (3.4)	22 (3.7)	38 (3.6)	0.8002
Dermatitis				
Contact	64 (13.8)	69(11.7)	133 (12.6)	0.3185
Seborrheic	30 (6.4)	8 (1.3)	38(3.6)	0.0000*
Atopic	14 (3)	17 (2.9)	31 (2.9)	0.9044
Acne vulgaris	51 (11)	63 (10.7)	114 (10.8)	0.8858
Melasma	8 (1.7)	74 (12.5)	82 (7.8)	0.0000*
Urticaria	19 (4)	37 (6.3)	56 (5.3)	0.1149
Alopecia	27 (5.8)	22 (3.7)	49 (4.6)	0.1123
Neoplasm	20 (4.3)	17 (2.9)	37 (3.5)	0.2147
Lichen planus	7 (1.5)	6 (1)	13 (1.2)	0.4766
Vitiligo	15 (3.2)	16(2.7)	31 (2.9)	0.6260
Psoriasis	17 (3.6)	10 (1.7)	27 (2.5)	0.0455*
Others	69 (14.8)	125 (21.2)	194 (18.4)	-----
Total patients	464 (44.1)	588(55.9)	1052 (100)	-----

* p value statistically significant.

Table 2 The Pattern of skin disease seen in hospitalized patients in Yazd University dermatology ward.

Condition	Male (N/%)	Female (N/%)	Total (N/%)	p value
Viral infections	18 (12)	42 (27.4)	60 (19.8)	0.0007*
Dermatitis	21 (14)	19 (12.4)	40 (13.2)	0.6842
Drug reactions	21 (14)	13 (8.5)	34 (11.2)	0.1291
Psoriasis	22 (14.6)	7 (4.5)	29 (9.6)	0.0028*
Bacterial infections	16 (10.6)	12 (7.8)	28 (9.2)	0.3961
Malignant lesions	12 (8)	14 (9.1)	26 (8.6)	0.7207
Bullous diseases	8 (5.3)	16 (10.4)	24 (7.9)	0.0986
Benign tumours	10 (6.6)	9 (5.8)	19 (6.3)	0.7782
Parasitic infections	5 (3.3)	7 (4.5)	12 (4)	0.5794
Connective tissue diseases	2 (1.3)	3 (1.9)	5 (1.6)	0.6681
Lichen planus	3 (2)	2 (1.3)	5 (1.6)	0.6360
Fungal infections	2 (1.3)	2 (1.3)	4 (1.3)	0.9840
Others	10 (6.6)	7 (4.5)	17 (5.7)	-----
Total patients	150 (49.5)	153 (50.5)	303 (100)	-----

* p value statistically significant.

groups according to **Table 2**.

Skin infections were the most frequent group (34.3%); with dermatitis (13.2%), drug reactions (11.2%), psoriasis (9.6%) and malignant tumors (8.6%) following suit.

In the infectious group, viral infections especially herpes zoster was the most common cause of admission (19.8%); bacterial infections (9.2%), parasitic infection (cutaneous leishmaniasis) in (4%), and dermatophytosis (1.3%) were next in order.

Gender difference was examined in all inpatients group and there was no significant difference (men 49.5%, women 50.5%, $p=0.943$). Drug reactions were more common in men but were not significant (14% vs. 8.5%, $p=0.129$). Psoriasis (14.6% men vs. 4.5% women, $p=0.002$) and herpes zoster (12% men vs. 27.4% women, $p=0.000$) were statistically significant.

The highest mean age was in the malignant tumor patients (56.9 ± 17.4 year) and the lowest age group belonged to tinea capitis patients (9 ± 1.8 year).

Duration of hospitalization was 1 to 54 days. The maximum duration was seen in patients with bullous disorders i.e. pemphigus vulgaris and bullous pemphigoid (12.2 ± 13 days) and the least duration was recorded in patients with benign and malignant tumors (2 ± 1.7 days).

Discussion

This study has presented the pattern of patient referral to tertiary medical centers, and is quite different from the society at large. Most of the skin conditions are not life threatening, and usually patients do not consult a physician.

A study conducted by Mandeuhall *et al.*¹ in the United States showed that acne, psoriasis and viral warts were the most common diseases. In most of the studies conducted in various British cities,² the most common causes of hospitalization in the dermatology wards were reported as viral diseases in 17-23%, followed by dermatitis in 15-24%. In a study conducted in Manchester (personal communication), dermatitis with 20% was reported as the commonest skin problem, followed by viral diseases and psoriasis (16.2 and 7.2%, respectively).

A study by Hardwick *et al.*³ reported dermatitis (19%) and viral diseases (16%) as the most common diseases in dermatology outpatients.

In another study, Lomholt⁴ reported that in a 1000 population, more than 50% had at list one skin lesion and half of them skin problem was so trivial that patients had never gone to a physician. Dermatitis was seen in 9% of study population while other common diseases were acne (8.6%), bacterial and parasitical diseases (4.6%) and viral diseases (3.4%).

Most of the aforementioned studies were conducted in the 1990's, and definitely the pattern of diseases shows a significant

difference today. Several studies have been carried out on the topic in Iran. A study conducted in Gilan Province⁵ showed that skin infections and dermatitis were the most common causes of patient referral to dermatology clinics, and study in Kerman^{6,7} also noted dermatitis, acne and melasma as the most common dermatoses.

In the present study, melasma was shown to be the most common cause of women referring to the clinic, but in the Kerman study, it was the third common reason. In European and US studies, melasma has not been reported as a significant problem. In our study, women were referred significantly more than men to dermatologist as in the majority of other studies. Regarding age distribution, the majority of patients less than five years of age were diagnosed with atopic and seborrheic dermatitis. In <15 year group, dermatophytosis was placed after dermatitis. The most frequent cause of referral of patients within the 15-25 year age was acne vulgaris, which is consistent with most of the studies.

Leishmaniasis was the most common parasitical disease in both the present study and the Kerman study,⁷ which accounted for 4% and 5.3% of all clinical referrals in the respective studies. Other parasitical diseases such as scabies and pediculosis in our population study were quite uncommon, while in the Gilan study, scabies singularly accounted for 9% of all the clinical referrals.⁵

The conditions and patterns of diseases vary widely based on climatic and seasonal, as well as environmental and personal health hygienic conditions. However, recognition of such circumstances can play a pivotal role in education, treatment, and prevention of diseases.

In both groups of our patients (outpatient and inpatient), skin infections, especially viral

infections, were amongst the top diseases. In outpatients' group; viral warts, and in inpatients, herpes zoster were most common entities followed by other viral diseases and then other bacterial, parasitic and fungal infections. It is highly likely that spread of skin infections is influenced by socio-economic and hygienic circumstances of the population, and many such diseases are preventable and controllable. Definitely, suitable planning for identification of etiological factors of diseases can help in the prevention of these conditions. Dermatitis is amongst the common diseases in the region, and amongst those, contact dermatitis is the most common. This is also the case worldwide, where young, employed population is exposed to a lot of occupational chemicals and allergens. Proper planning to inform the population, especially those employed in industrial, agricultural, or construction activities, will have a notable effect on the reduction of such diseases.

Malignant tumors and precancerous conditions can be caused by skin types as well as cultural and social habits. Proper education of the population regarding the adverse effects of the sun, which is the most important factor in

causing such diseases, and ways to reduce the sun damage for people in open spaces, can improve conditions dramatically.

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