

# Pattern of skin diseases in a tertiary care private hospital, Karachi

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**Objective** To determine the pattern of skin diseases in a tertiary care hospital in Karachi and to compare the results with local and international literature.

**Methods** The current study was carried out in the Dermatology Department, Hamdard University Hospital, Karachi from 1<sup>st</sup> September 2011 to 31<sup>st</sup> August 2012 over a period of 1 year. All the freshly registered patients presenting in the outpatient were enrolled irrespective of gender and age, after an informed consent. Clinical diagnosis was made on the basis of detailed history and clinical examination. Laboratory investigations were performed where required e.g. routine investigations and biochemical profile. Skin biopsy and histopathology were performed in doubtful cases. All the findings were recorded, compiled, tabulated and analyzed.

**Results** 1733 patients comprising 936 (54%) females and 797 (46%) males were enrolled. There were 728 (42%) children and 1005 (58%) adults. Infections and infestations were the most common skin conditions constituting 37.4% of all the enrolled patients of which 399 (23%) were children and 250 (14.4%) adults. Eczema was next in frequency comprising 313 (18%) patients including 150 (8.6%) children and 163 (9.4%) adults. Acne was seen in 229 (13%) patients, urticaria in 97 (5.5%) while hair disorders were recorded in 66 (4%) patients. Papulosquamous disorders and pigmentary dermatoses were observed in less than 3% of the patients studied. Scabies presented with the highest frequency (18%) and among pyodermas (10%), furunculosis (4%) and impetigo 59 (3%), being the most frequent. Fungal infections (3%) had a frequency more than viral infections (2%). Atopic dermatitis was the most frequently seen eczema (6%) followed by seborrhoeic dermatitis (5%) and contact dermatitis (4.5%).

**Conclusion** The pattern of skin diseases is same in various cities of Pakistan with minor differences. Scabies and infections remain the most common diseases while eczema also constitutes an important group of dermatoses in our part of the world.

## Key words

Pattern of skin diseases, scabies, atopic dermatitis, infections, infestations.

## Introduction

Skin diseases and their complications have significant effects on patient's quality of life.. These problems range from cosmetic problems such as dry skin, wrinkles, pigmentation to acute or chronic diseases which may be

disfiguring but may not be fatal. However, life-threatening conditions, if untreated may prove fatal (toxic epidermal necrolysis, pemphigus, malignant melanoma and cutaneous lymphoma).<sup>1</sup>

The pattern of skin diseases varies from one country to another as well as in cities and towns. Certain factors influence the pattern and frequency of presentation of various skin diseases e.g. genetics factors, nutritional and socio-economic status, occupation, personal

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habits and ethnicity.<sup>2-6</sup> Skin diseases being common among the general population, account for a high percentage of all diseases dealt by physicians.<sup>7-9</sup>

Although skin diseases (especially infections and infestations) are a common health problem in developing countries, they are not usually perceived to be a significant health concern. Numerous studies of prevalence and frequency of skin diseases have been done in all age groups. Similar sort of studies have also been conducted from time to time in different parts of our country.

Current study was targeted to determine the pattern of skin diseases in a tertiary care hospital in Karachi and to compare the results with local and domestic literature.

## **Methods**

This study was carried out in the "Dermatology Department, Hamdard University Hospital, Karachi" from 1<sup>st</sup> September 2011 till 31<sup>st</sup> August 2012 over a period of 1 year. All the patients presenting in the outpatient department of Dermatology, as well as those referred from other departments for dermatological opinion were enrolled by convenient sampling. Patients belonging to either sex were included in the study irrespective of their age. All the selected patients were subjected to an informed consent. Only freshly registered patients were included and follow-up cases were ruled out.

A predesigned Performa was used to gather information regarding patient's occupation, nutritional and socio-economical status and any history of traveling recently to an endemic area of a particular disease.

After a detailed history patients were subjected to comprehensive dermatological and systemic examination. Clinical diagnosis was made on

the basis of detailed history and clinical examination. Laboratory investigations were performed where required. These included routine investigations like complete blood picture, urinalysis and X-ray chest. Biochemical profile was performed in selected cases. Skin biopsy and histopathology were performed in doubtful cases. Other relevant investigations were done according to the requirement. Diseases were classified in different groups for convenience. All the findings were recorded, compiled, tabulated and analyzed by Microsoft SPSS.

Finally the percentages were compared with similar studies from other parts of the world as well as from Pakistan.

## **Results**

A total of 1733 were included in the study. There were 936 females (54%) and 797 males (46%). The age range was from neonate to 70 years. There were 728 children (42%) children and 1005 adults (58%). **Table 1** reveals the common skin diseases in accordance with their frequency of presentation and age wise distribution.

Infections and infestations were the most common skin conditions constituting 37.5% of all the enrolled patients of which 399 were children (23%) and 250 adults (14.5%). Eczema was next in frequency constituting 313 patients (18%) including 150 children (8.6%) and 163 adults (9.5%).

Acne was seen in 229 patients (13%), comprising one neonate while remaining 228 were adults. Among vascular disorders urticaria had a frequency of 97 (5.5%) while hair disorders were recorded in 66 patients (4%). Papulosquamous and pigmentary dermatoses were observed in less than 3% of the patients.

**Table 1** Distribution of different skin diseases in different age groups (N=1733).

<i>Diseases group</i>	<i>Children N (%)</i>	<i>Adults N (%)</i>	<i>Total N (%)</i>
Infections & infestations	399 (23)	250 (14.5)	649 (37.5)
Eczema	150 (9)	163 (9.5)	313 (18)
Acne	1	228 (13)	229 (13)
Other dermatoses	83 (5)	201 (11.5)	284 (16)
Urticaria	45 (2.5)	52 (3)	97 (6)
Disorder of hair	16 (1)	50 (3)	66 (4)
Papulosquamous disorders	17 (1)	32 (2)	49 (3)
Pigmentary disorders	17 (1)	29 (1)	46 (2.5)
Total	728 (42)	1005 (58)	1733

**Table 2** Pattern of different disease groups (n=1733).

<i>Diseases group</i>	<i>N (%)</i>
<i>Infestations</i>	361 (21)
Scabies	308 (16)
Others	53 (3)
<i>Pyoderma</i>	173 (10)
Furunculosis	73 (4)
Impetigo	59 (3)
Others	41 (2)
<i>Other infections</i>	115 (7)
Fungal	52 (3)
Viral	33 (2)
Other	30 (1)
<i>Eczemas</i>	313 (18)
Atopic dermatitis	100 (6)
Seborrheic dermatitis	89 (5)
Contact dermatitis	80 (4.5)
Others	44 (2.5)
<i>Papulosquamous disorders</i>	49 (3)
Psoriasis	21 (1)
Lichen planus	17 (1)
Pityriasis rosea	11 (0.5)
<i>Pigmentary disorders</i>	46 (2.5)
Melasma	22 (1)
Vitiligo	16 (1)
Other	8 (0.5)

Pattern of different diseases can be appreciated from the **Table 2**. In the group of infestations and infections scabies presented with the highest frequency (18%). Among pyodermas (10%), furunculosis (4%) and impetigo (3%) were the most frequent. Fungal infections (3%) were followed by viral infections (2%).

In the group of eczema, atopic dermatitis was the most frequently seen (6%) followed by seborrheic dermatitis (5%) and contact dermatitis 80 (4.5%). Out of 49 patients with papulosquamous disorder, psoriasis was found in (1%), while lichen planus and pityriasis

rosea, in (1%) and less than 1% patients respectively. Melasma (1%) and vitiligo (1%) were common in the pigmentary group.

The category of other dermatoses 284 (16%) was one in which skin diseases constituted a frequency less than 0.5% of total sample size.

## Discussion

Karachi is the largest city of Pakistan, a thickly-populated metropolis with a population around 18 millions. It is a city with executives working in offices, as well as, laborers working for long hours in the sunlight. The weather here is hot and humid throughout the year with winter season lasting a few weeks. Such weather could be responsible for different cutaneous infections. The population of Karachi is a mixed one, with people belonging to different ethnic groups and coming from different areas of our country. This factor accounts for diseases like leishmaniasis being transported from endemic areas. Lack of health education, poverty, illiteracy, poor hygiene and communal living are other contributory factors.

Epidemiology offers one of the most powerful direct methods of evaluating skin diseases in human population. Not much epidemiological work has been done in this field in our country. **Tables 3** and **4** reveal a comparison of different past studies with the current study, conducted at national level, as well as, internationally.<sup>2,10-18</sup>

**Table 3** Comparison of prevalence rate of different disease in the present study with previous studies.

Disease	Karachi 1985 [14]	Lahore 1961 [15]	Bahawalpur 2000 [16]	Karachi 2003 [17]
Scabies	22.4%	9.6%	14.6%	15.4%
Atopic dermatitis	0.6%		1.2%	2.6%
Lichen simplex chronicus	2.8%	1%	1%	3%
Contact dermatitis	3.3%	-	4.8%	2%
Fungal infections	12.6%	4.8%	10.7%	12.5%
Bacterial infections	12.8%	17.5%	5.9%	6.4%
Tuberculosis cutis	0.7%	0.6%	0.4%	0.1%
Viral infections	2.5%	0.7%	3.7%	1.7%
Acne	2.8%	1.6%	7%	8.5%
Disorders of hyperpigmentation	1.3%	1.2%	3.3%	6.2%
Vitiligo	0.1%	1.5%	1.6%	1.2%
Urticaria	3.1%	2%	4.9%	2.4%
Psoriasis	0.7%	2%	1.8%	2.1%
Pityriasis rosea	0.2%	-	0.2%	0.1%
Fixed drug eruption	0.8%	-	0.6%	0.1%
Ichthyosis	0.7%	-	0.5%	0.4%
Lupus erythematosus	0.4%	-	0.6%	0.1%

**Table 4** Comparative frequency (%) of common skin conditions (N=1733).

Diseases Group	HUH, Pakistan	Rawalpindi, Pakistan 2010 [11]	Imphal, India 2006 [12]	Hamedan, Iran 2002 [2]	Al-Jauf, Saudi Arabia 1997 [143]
Scabies	17.7%	18.9%	8.97%	NR	NR
Infections	16.6%	16.9%	33.7%	7.7%	26.9%
Eczema	18.0%	13.9%	17.4%	37.5%	34.1%
Acne	13.1%	11.9%	6.0%	11.7%	9.5%
Urticaria	5.5%	5.6%	5.6%	NR	4.9%

In the current study, scabies was the most frequent dermatosis (18%). In the past studies conducted in different parts of our country, scabies has already been reported to be the most common skin disease with a variable frequency.<sup>11,14-17</sup> Therefore, our finding is at par with the studies mentioned.<sup>11,14-17</sup> Devi and Zamzachin<sup>12</sup> have reported a frequency (9%) which is half as compared to that in the current study. Memon *et al.*<sup>18</sup> from Hyderabad, reported the frequency of scabies to be as high as 45.5%. They claimed the shortage of water supply and poor hygiene as the cause of this high prevalence.

In the current study, infections had a frequency of 17%. The frequency of infections was reported to be equivalent in the study by Tameezuddin *et al.*<sup>11</sup> On the other hand past studies from Karachi,<sup>14,17</sup> Lahore,<sup>15</sup> Bahawalpur,<sup>16</sup> and Rawalpindi<sup>10</sup> reported a higher frequency as compared to the current

study. On the contrary Devi and Zamzachin<sup>12</sup> from the neighbouring country India, has reported the frequency of infections to be as high as 33%. This discrepancy in turn could be due to a small sample size of our study. Moreover, the frequency of different infections i.e. bacterial (10%), viral (2%) and fungal (3%) was less than that reported in the past studies.<sup>11,14-17</sup> Again a small sample size in our study may be responsible for the difference. Zamanian *et al.*<sup>2</sup> from Iran and Agarwal *et al.*<sup>13</sup> from Saudi Arabia have reported the frequency of infections to be 8% and 27%, respectively. This difference could be explained by a difference in setting and design of the studies. Memon *et al.*<sup>18</sup> from Hyderabad, reported the frequency of infections to be 42.5%.

In the group of eczema (18%), atopic dermatitis was the most frequent (6%) followed by seborrhoeic dermatitis (5%) and contact dermatitis (4.5%). While other

eczemas were seen less frequently. Atopic dermatitis, seborrhoeic dermatitis and contact dermatitis have also been reported in the past studies.<sup>14-17</sup> Zamanian *et al.*<sup>2</sup> from Iran and Agarwal *et al.*<sup>14</sup> from Saudi Arabia have reported the frequency of eczema as a group to be much higher i.e. 37% and 34%, respectively. Devi and Zamzachin<sup>12</sup> from India have reported a frequency of eczema comparable to that in our study. Moreover, eczema topped the list of dermatoses in the study mentioned.<sup>12</sup> Ali *et al.*<sup>19</sup> from Saudi Arabia also presented eczema to be the most common skin problem. However, the frequency of clinical diseases can also vary from one study to another depending on the sample size, which was smaller in our study.

In our study, acne was seen in 13% of the enrolled subjects. The frequency of acne in our study is somewhat higher than that reported in the past studies.<sup>12,14-17</sup> Does it show a real increase in the occurrence of acne or patients have become more cosmetic-conscious, needs to be determined. Zamanian *et al.*<sup>2</sup>, Tamizz uddin *et al.*<sup>11</sup> and Agarwal *et al.*<sup>13</sup> have reported frequencies comparable to that in our study. Ali *et al.*<sup>19</sup> have reported acne in 9.5% patients.

The frequency of urticaria (6%) in the current study, was almost twice as that reported in the past studies.<sup>14-17</sup> On the contrary, Zamanian *et al.*<sup>2</sup>, Tamizz uddin *et al.*<sup>11</sup> and Agarwal *et al.*<sup>13</sup> reported a frequency which is comparable to that in our study. Thus, the findings in our study are in agreement with the past studies.<sup>11,13,14</sup>

Out of 49 patients with papulosquamous disorder, psoriasis was seen in 1%, while lichen planus and pityriasis rosea, in 1% and 0.5% patients, respectively. Likewise the frequency of these disorders has also been reported to be 1% or less in the past studies.<sup>14-16</sup> However, Ahmed *et al.*<sup>17</sup> have reported a

higher frequency as compared to the current study. On the other hand no comparable figures were quoted in the studies mentioned from Iran,<sup>2</sup> India,<sup>12</sup> and Saudi Arabia.<sup>13</sup> Ali *et al.*<sup>19</sup> from Saudi Arabia, reported 5% prevalence of papulosquamous disorders. Asokan *et al.*<sup>20</sup> have found the frequency of papulosquamous disorders to be as high as 12-5% for some unknown reason.

Melasma (1%) and vitiligo (1%) were the most common pigmentary disorders in this study. The frequency of vitiligo around 1% in the past studies is consistent with the current study.<sup>14-16</sup> Ahmed *et al.*<sup>17</sup> have reported a frequency four fold higher as far as melasma is concerned in contrast to the current study. Ali *et al.*<sup>19</sup> from Saudi Arabia, reported a prevalence of 6.5% for pigmentary disorders. This in turn may reflect an increase in the cosmetic concerns of the patients.

Hair disorders were recorded in 66 patients (4%). Ahmed *et al.*<sup>17</sup> have reported the frequency of hair disorders to be 8%. This frequency in turn is twice that recorded in our study. Other studies mentioned have not revealed hair disorders as a distinct group. On the contrary, Asokan *et al.*<sup>20</sup> have reported hair disorders to be as frequent as 1.5%.

The category of other dermatoses 284 (16%) included skin diseases presenting with the least frequency. The frequency for each these disorders were around 0.5%. Few examples of such disorders are: burns, miliaria, xanthelasma, skin tags, striae, corns and in growing toenails etc.

Bullous disorders, drug eruptions, connective tissue diseases, malignancies and nevroid disorders were not reported in our study.

Pattern of skin diseases in any community is governed by a number of factors like personal hygiene, overcrowding, nutritional status,

educational background, family size, family history, traditional taboos and socioeconomic conditions.<sup>21</sup> This pattern may differ from country to country and within different geographical regions of the same country. Similarly, the spectrum of diseases may change with time.<sup>21</sup> Therefore; the data presented in our study seems to be comparable to different domestic and international studies.

## Conclusion

It can be concluded that the pattern of skin diseases is same in various cities of Pakistan with minor differences in frequency. Scabies and infections being the most common diseases necessitate a need for better health education, improved hygiene and good living standards. Public resources should make people aware of skin diseases and their preventive measures, so that we can reduce the burden of skin diseases in our society.

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