

# Pattern of skin diseases in Eastern Saudi Arabia

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## ABSTRACT

**Objectives:** To describe the pattern of skin disease in the Eastern Province and compare it with similar studies carried out in other regions of Saudi Arabia.

**Methods:** All new dermatology cases reporting at King Fahd Hospital of the University in Al-Khobar, Saudi Arabia, seen between August 2002 to July 2003 were reviewed.

**Results:** One thousand and seventy-six new patients within the period of the study were seen. Dermatitis/eczema was the most frequent dermatosis (19.6%) with atopic dermatitis forming 35.9% among eczemas, followed by acne (13.8%), viral infection (13.5%), of which 11.9% had viral warts; pigmentary disorders

(9.7%) with vitiligo comprising 5% of the total. In fungal infections (9.6%), dermatophytoses formed 6.3% of the total patients, alopecias 7.2%, papulosquamous disorders 6.4%, of which 3.4% had psoriasis and 1.7% had lichen planus; urticaria 5.7%, pyoderma 4.8%, and the parasitic infections, 1%.

**Conclusion:** This comparative study showed that eczema was the most frequent diagnosis among all skin diseases and parasitic infections were the least frequent diseases. Generally, the Eastern Province study is closely comparable to other studies in the country with higher frequencies of viral and fungal infections and acne.

Saudi Med J 2005; Vol. 26 (10): 1607-1610

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The ideal method to study the prevalence and the incidence of diseases is by conducting community-based study. However, this is a cumbersome task and time-consuming in a large country like Saudi Arabia (SA). It is necessary for any dermatologist to know the epidemiological background for common skin diseases. Such a study is important for improvement of treatment facilities as well as the pharmaceutical industry and health planning. King Fahad Hospital of the University (KFHU) is the main teaching hospital in the Eastern region of SA and the only tertiary Health care center accessed by many patients. It serves a population of approximately 3,000,000. Being in a teaching hospital, our dermatology department is actively involved in various academic activities including training of undergraduate medical students and postgraduate dermatology residents. To increase the number of

patients for trainees, the policy of the department is to allow patients an easy access to the outpatient department (OPD) directly without referral. This ensures an input of a wide spectrum of diseases including simpler problems more commonly seen in primary health care by general practitioners. Previous studies investigated the pattern of skin diseases in several regions of SA such as Asir, Al-Jouf, Hail, Jeddah and Najran.<sup>1-5</sup> All these studies were hospital-based and some of these hospitals are referral hospitals such as Asir Central Hospital (ACH) in Abha, King Khalid Hospital (KKH) in Hail, and Najran General Hospital, which may well reflect the pattern of skin diseases in those regions. This study aims to describe the pattern of skin diseases in the Eastern Province (EP) and compare the results with those of previous studies conducted in SA.

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Received 20th April 2005. Accepted for publication in final form 10th July 2005.

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**Methods.** During the 12 months study period between August 2002 to July 2003 all new cases attending the Dermatology Outpatient Department (OPD), emergency room (ER), or other departments of KFHU, Al-Khobar, SA seeking an opinion from the dermatology department for their skin problems were included in this study. All demographic data were recorded, and the diseases classified into various groups, in accordance with the International Classification of Diseases (ICD) as far as possible. Diagnoses were made mainly by consultants and specialists, based on the clinical presentation, laboratory findings and, whenever necessary histopathological findings. Patients with congenital diseases and deep mycoses were excluded from the study. Data analysis were carried out manually.

**Results.** From 5470 patients seen during the 12 months study period, 1,676 were new cases including 1,432 (85.5%) Saudi nationals and 244 (14.6%) non-Saudis. There were 1,274 (76%) adults >13 years, and 402 (24%) children <13 years. Males were 820 (49%) and females were 856 (51%) with a male to female ratio of 1:1.3. The major groups of diseases are presented in descending order of

frequency in **Table 1**. **Table 2** outlines the distribution of diseases in various groups according to demographic data. Atopic dermatitis was the most prevalent type of eczema, and mostly in children. The most prevalent pigmentary disorder was vitiligo. Of the viral infections, viral warts were the most frequent and comprised 11.9% of the total number of patients. The most frequent among fungal infections were dermatophytoses, and psoriasis was the most frequent papulosquamous disorder. Lichen planus and parasitic infections were the least frequent diseases. A comparison of the results of disease's frequency in the present study and other regional studies is given in **Table 3**.

**Discussion.** The author found that eczema was the most prevalent diagnosis in the present study as well as in other regional studies,<sup>1-5</sup> the frequency ranged between 16.3% (in Hail) to 37% (in Najran), as is evident from **Table 3**. Atopic dermatitis was the most prevalent in the eczema group, and most of them were children, similar to other regional studies.<sup>1-3,5</sup> The higher frequency of eczema among all diseases in all regions in the kingdom is unlikely to be by chance, but may reflect an overall exposure to various allergens encountered in the food and the environment. Because of the consanguineous marriages in the tribal based society of SA, endogenous factors might be involved particularly the genetic predisposition to allergic diseases, such as atopic dermatitis, although the mode of inheritance is yet to be known. Acne came next in frequency, similar to 3 other regional studies.<sup>3-5</sup> We can attribute this to the patients concern about their facial appearance specifically in females, as well as the related genetic factors. In this study, we reported viral warts and fungal infections more frequently than other studies (**Table 3**). We can relate this higher frequency to the hot and humid weather during the summer in the EP as in other studies.<sup>6,7</sup> Megler et al<sup>8</sup> reported the higher occurrence of viral warts among workers in poultry slaughterhouses and attributed this to high humidity, which facilitates cutaneous infection by the virus. We cannot claim that these frequencies reflect the real prevalence because of the limitation of the hospital based studies, however, they give a good estimate of the occurrence of common skin diseases in the Eastern Province. It is most likely that there is under reported diseases such as sexually transmitted disease (STDs), where patients tend to look for privacy by visiting private clinics. Leishmaniasis in the Eastern Province is endemic and expected to be higher in occurrence, but as there is a specialized center of leishmaniasis in Al-Ahsa, this might have lead to underestimation. Similarly, patients with cutaneous neoplasms report to plastic surgery and connective tissue disease's patients go to rheumatology clinic in our hospitals, thus,

Table 1 - Common skin diseases.

Disease group (in descending order of frequency)	n (%)
Eczemas/dermatitis	329 (19.6)
Acne and related conditions	232 (13.8)
Viral infections	227 (13.5)
Pigmentary disorders	162 (9.7)
Fungal infections	160 (9.6)
Alopecias	107 (7.2)
Papulosquamous disorder	121 (6.5)
Urticaria	96 (5.7)
Pyoderma	81 (4.8)
Parasitic infections	17 (1)
Miscellaneous*	144 (8.6)
<b>Total</b>	<b>1676 (100)</b>
*comprising cutaneous neoplasm, connective tissue diseases, bullous diseases, sexually transmitted disease and drug eruption.	

Table 2 - Distribution of diseases in various groups along with demographic data.

Disease group	Nationality (Saudi/Non-saudi)	Age Children/Adults <13 years/>13 years	Gender Male/female	Total	Group %	Total %
<b>Eczemas</b>						
Atopic dermatitis	100/18	80/38	50/68	118	35.9	7
Contact dermatitis	62/10	20/52	34/38	72	21.9	4.3
Seborrheic dermatitis	55/11	28/38	31/35	66	20.1	3.9
Others	59/14	50/23	33/40	73	22.2	4.4
Total	276/53	178/151	148/81	329	100	19.6
<b>Urticaria</b>	88/8	12/84	41/55	96	-	5.7
<b>Acne</b>	212/20	15/217	106/126	232	-	13.8
<b>Pigmentary disorders</b>						
Vitiligo	69/15	19/65	44/40	84	51.9	5
Melasma	24/4	3/25	8/20	28	17.3	1.7
Post-inflammatory hyperpigmentation	31/2	2/31	9/24	33	20.4	2
Post-inflammatory hypopigmentation	15/2	7/10	11/6	17	10.5	1
Total	139/23	31/131	72/90	162	100	9.7
<b>Viral infections</b>						
Viral warts	176/24	48/152	119/81	200	88.1	11.9
Herpes zoster	12/2	3/11	6/8	14	6.2	0.8
Chicken pox	2/1	2/1	2/1	3	1.3	0.2
Herpes simplex	4/0	1/3	2/2	4	1.8	0.2
Molluscum contagiosum	6/0	5/1	3/3	6	2.6	0.4
Total	200/27	59/168	132/95	227	100	13.5
<b>Pyoderma</b>	74/7	20/61	43/38	81	-	4.8
<b>Alopecias</b>	110/11	26/95	46/75	121	-	7.2
<b>Fungal infections</b>						
Dermatophytes	64/42	18/88	66/40	106	66.25	6.3
Pityriasis versicolor	36/10	2/44	32/14	46	28.75	2.8
Candidiasis	7/1	3/5	6/2	8	5	0.5
Total	107/53	23/137	104/56	160	100	9.6
<b>Parasitic diseases</b>						
Cutaneous leishmaniasis	6/2	4/4	4/4	8	47.1	0.5
Scabies	7/2	2/7	5/4	9	53	0.5
Total	13/4	6/11	9/8	17	100	1
<b>Papulosquamous diseases</b>						
Psoriasis	50/7	3/54	30/27	57	53.3	3.4
Pityriasis rosea	19/2	13/8	13/8	21	26.2	1.3
Pityriasis rubra pilaris	0/1	1/0	1/0	1	0.9	0.1
Lichen planus	23/5	8/20	8/20	28	19.6	1.7
Total	92/15	25/82	52/55	107	100	6.5
<b>Miscellaneous*</b>	121/23	7/137	67/77	144	-	8.6

\*comprising cutaneous neoplasm, connective tissue diseases, bullous, diseases, sexually transmitted disease and drug eruption.

Table 3 - Comparison of frequency of some common skin diseases in this study and other different regional studies in Saudi Arabia.

Dermatoses	Asir %	Al-Jouf %	Hail %	Jeddah %	Najran %	Eastern province %
Dermatitis/eczema	25.7	34.1	16.3	18.6	37	19.6
Atopic dermatitis	13.8	14.3	8.25	not available	18.5	7
Acne	5.5	9.6	12.4	9.5	12.8	13.8
Viral warts	2.5	2.9	8.4	6.8	6	11.9
Superficial mycoses	6.2	7.8	6.2	6.5	5.6	9.6
Pyoderma	3.2	10.9	2.8	7.7	5	4.8
Vitiligo	3	3.4	3.9	3.1	7	5
Psoriasis	2.1	5.3	3.6	3	1.5	3.4
Lichen planus	1.3	1.2	1.2	0.6	1.1	1.7

resulting in a very small number of those patients attending the Dermatology clinics.

## References

1. Bahamdan KA, Egere JU, Khare AK, Tallab T, Ibrahim K, Mourad MM. The pattern of skin diseases in Asir region, Saudi Arabia: a 12-month prospective study in a referral hospital. *Ann Saudi Med* 1995; 15: 455-457.
2. Agarwal PK. Pattern of skin diseases in the Al-Jouf region. *Ann Saudi Med* 1997; 17: 112-114.
3. Parthasaradhi, Al Jufai AF. The pattern of skin diseases in Hail region, Saudi Arabia. *Ann Saudi Med* 1998; 18: 558-561.
4. Raddadi AA, Abdullah SH, Damanhour ZB. Pattern of skin diseases at King Khalid National Guard Hospital: A 12-month prospective study. *Ann Saudi Med* 1999; 19: 453-454.
5. Shelleh HH, Al-Hatiti HS. Pattern of skin diseases in a hospital in Southwestern Saudi Arabia. *Saudi Med J* 2004; 25: 507-510.
6. Ninomiya J. Effect of temperature, humidity, and minor injury to the penetration of dermatophytes into human stratum corneum (Article in Japanese). *Nippon Inshikin Gakkai Zasshi* 2000; 41: 5-9.
7. Perez Blanco M, Urbina de Guanipa O, Fernandez Zeppenfeldt G, Richard de Yegres N. Effect of temperature and humidity on the frequency of pityriasis versicolor. Epidemiological study in the state of Falcon, Venezuela (Article in Spanish). *Invest Clin* 1990; 31: 121-128.
8. Mergler D, Vezina N, Beauvais A. Warts workers in poultry slaughterhouses. *Scand J Work Environ Health* 1982; 8 Suppl 1: 180-184.