

Prevalence of skin diseases among Omani population attending dermatology clinics in North Batinah Governorate, Oman – retrospective study of 2,32,362 cases

Sir,

After prior approval from regional research and ethics approval committee, we conducted a retrospective analysis of the data of all patients attending 5 dermatology clinics in North Batinah Governorate of Oman, i.e. Sohar, Saham, Shinas, Khabura and Suwaiq for 4 years from 01/01/2010 to 31/12/2013. Data was grouped on the basis of etiological diagnoses and a comparison was done with previous studies available in the region and other parts of the world.

During the study period, 232362 patients sought dermatology consultation, as depicted in Table 1. Age of the subjects ranged from the 2 days to 90 years and the gender distribution is as shown in Table 2, with a female predominance. Majority (45%) of the cases belonged to the age group 15 to 35 years; at the same time, children less than 5 years of age formed a sizeable 16.66% of the study population.

Non-infectious conditions topped the list accounting for 34.60% ($n = 80398$) of the etiological diagnoses, whereas infectious conditions amounted to 23.64 percent ($n = 54929$) as shown in Table 3 and Figure 1 respectively.

Acne (11.31%, $n = 26292$) was the single largest condition followed by viral warts (6.88%, $n = 15984$). Amongst the non-infectious disorders, acne accounted for the largest share (11.31%, $n = 26292$) followed by atopic dermatitis (8.34%, $n = 19373$), further followed by urticaria (4.1%, $n = 9569$).

Table 4 shows fungal, viral, bacterial infections and also disorders affecting hair.

Figure 2 shows the details of various fungal infections in this study. Chronic paronychia was the leading cause (79.53%

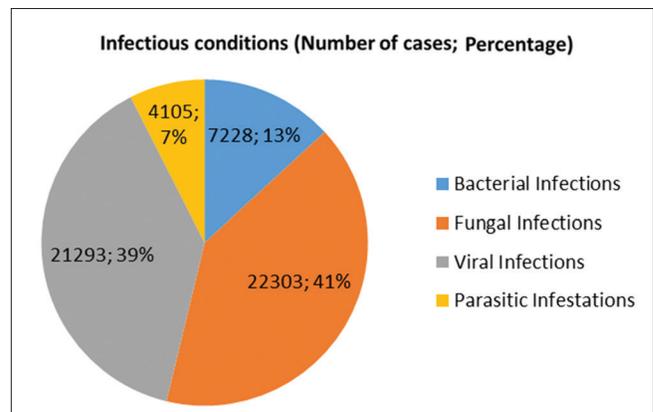


Figure 1: Infectious Disorders

of nail disorders, $n = 2638$) nail dystrophy (6.87% of nail conditions, $n = 228$) and acute paronychia (5.37% of nail conditions, $n = 178$) were the other important conditions, as shown in Figure 3.

Figure 4 shows prevalence of viral infections; viral warts (75.10%, $n = 15984$) were the largest condition in this group though not included in this figure are detailed in Table 4.

Table 5 depicts some important disorders that are classified in “Other dermatitis” according to International classification of diseases (ICD 10).

Zoman¹ *et al* also performed a similar study collecting 5 years’ data from a tertiary care hospital in Saudi Arabia. However, our study includes cases from both primary care (walk-in) and secondary care (referred cases) setting;

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Table 1: Types of skin conditions observed

Condition	Males	Females	Total	Percentage
Acne	8446	17846	26292	11.31
Impetigo	2110	1426	3536	1.52
Pyoderma	995	664	1659	0.71
Bacterial infection	1262	424	1686	0.73
Allergic contact dermatitis	2253	3011	5264	2.26
Alopecia Areata	4642	1564	6206	2.67
Androgenic Alopecia	181	112	293	0.13
Atopic dermatitis	8854	7050	15904	6.84
Nummular dermatitis	1460	2009	3469	1.49
Corns	993	922	1915	0.82
Balanitis	131	00	131	0.056
Discoid lupus erythematosus	59	112	171	0.07
Diaper Rash	1050	850	1900	0.82
Erythema multiforme	51	36	87	0.037
Exfoliative dermatitis	98	34	132	0.056
Haemangioma	92	151	243	0.10
Herpes simplex	578	589	1167	0.5
Infective eczematoid dermatitis	234	113	347	0.15
Irritant contact dermatitis	347	1047	1394	0.6
Keloids	686	682	1368	0.59
Keratoderma	327	530	857	0.37
Lichen nitidus	43	22	65	0.028
Lichen planus	287	580	867	0.37
Neurodermatitis	200	163	363	0.16
Miliaria	787	628	1415	0.61
Melasma	347	6834	7181	3.09
Molluscum contagiosum	996	607	1603	0.69
Chronic paronychia (includes both fungal and bacterial)	551	2087	2638	1.14
Nail dystrophy	84	434	518	0.22
Naevus	515	541	1056	0.45
Onycholysis	56	41	97	0.042
Perioral dermatitis	78	257	335	0.144
Pediculosis	102	983	1085	0.47
Psoriasis	2015	1700	3715	1.6
Rosacea	81	211	292	0.13
Scabies	1804	1216	3020	1.3
Syphilis	80	85	165	0.07
Erectile dysfunction	2101	--	2101	0.9
Tinea dermatophyte infections	3945	4347	8292	3.57
Urticaria	3608	5961	9569	4.1
Varicella	865	648	1513	0.66
Vitiligo	2583	2372	4955	2.13
Warts	9271	6713	15984	6.88
Xanthelasma palpebrarum	19	96	115	0.05
Herpes Zoster	646	380	1026	0.44
Total number of specific conditions	65913	76078	141991	61.11
Other dermatoses	42325	48046	90371	38.89
Total	108238 (46.58%)	124124 (53.42%)	232362	

thus our study sample better showcases the true prevalence in general population. This minimizes selection bias among the subjects and could be extrapolated to reflect the trends in the whole country.

Infections were the commonest conditions in studies from Tunisia², Iran³ and Qatar⁴. In the present study, a prevalence of 9.6% of fungal infections was noted and was followed by viral and bacterial infections. Hot and humid conditions in

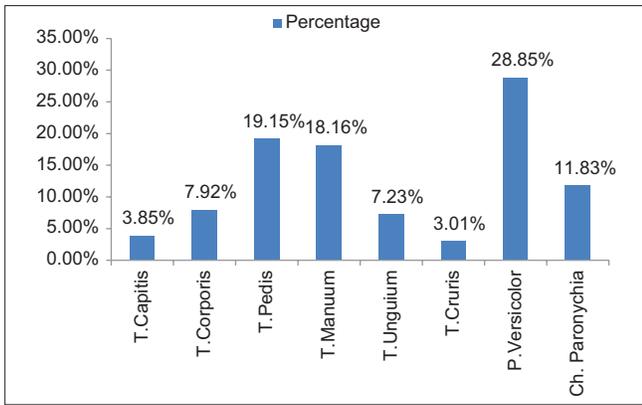


Figure 2: Fungal infections

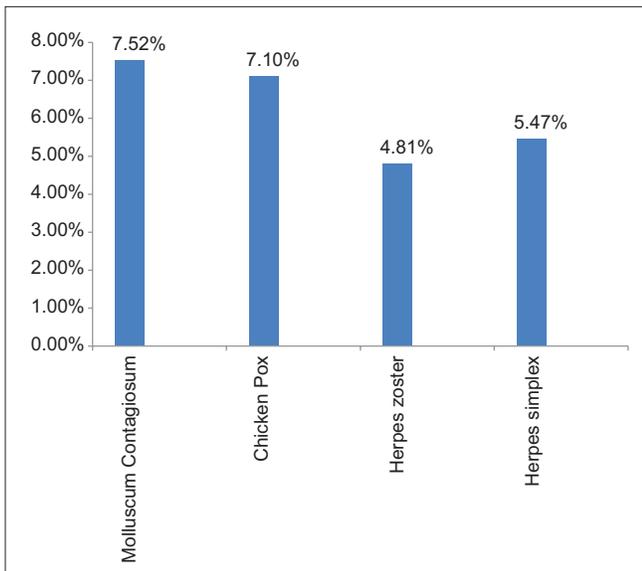


Figure 4: Viral infections

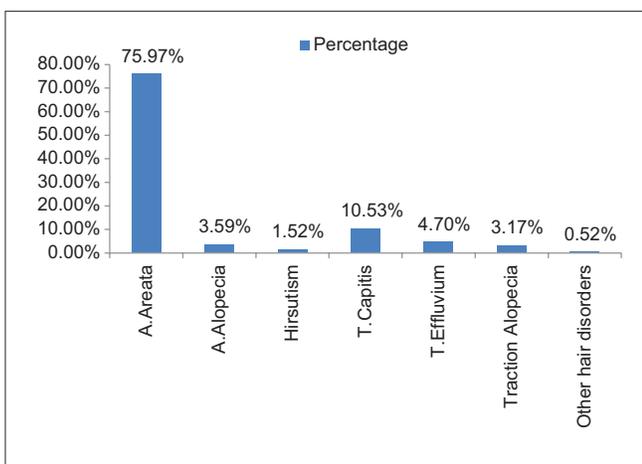


Figure 6: Hair disorders

Oman almost throughout the year may be the predisposing factor for the high prevalence of fungal infections.

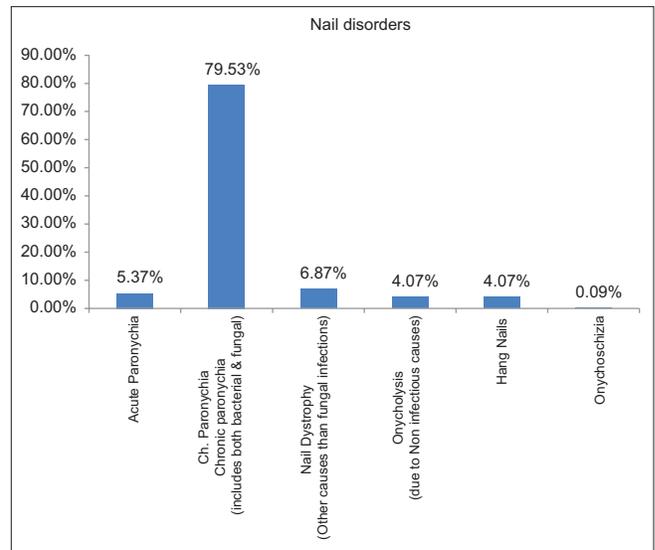


Figure 3: Spectrum of nail disorders

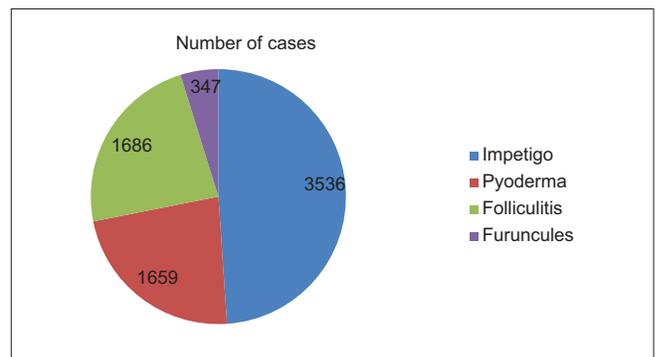


Figure 5: Bacterial infections

Table 2: Age group and gender wise distribution

Age Group (In Years)	Males	Females	Total (percent)
0-5	20898	17813	38711
5-15	16015	14845	30860
15-25	28863	32783	61646
25-35	17489	25718	43207
35-45	8890	17861	26751
45-55	7075	10212	17287
55-65	4591	3690	8281
65-75	3198	1077	4275
>75	1219	125	1344
Total	108238	124124	232362

Prevalence of warts in our study was 6.88% which is comparable to another report (6.27%).² Details of viral infections are shown in Figure 4.

Bacterial infections were not very common (3.11%) in this study, they are shown in Figure 5.

Table 3: Non Infectious conditions

Conditions	Males	Females	Total
Atopic dermatitis	10314	9059	19373
Other atopic dermatitis/allergic dermatoses (atopic dermatitis cases which do not fulfil criteria for diagnosis of Atopic dermatitis)	2900	4058	6958
Seborrheic dermatitis	276	201	477
Lichen simplex chronicus	200	163	363
Acne (includes all varieties of acne)	8446	17846	26292
Keratoderma	327	530	857
Lichen planus	287	580	867
Keloids	686	682	1368
Miliaria	787	628	1415
Perioral dermatitis	78	257	335
Urticaria	3608	5961	9569
Exfoliative dermatitis	98	34	132
Erythema multiforme	51	36	87
Discoid lupus erythematosus	59	112	171
Corns & callosities	993	922	1915
Alopecia areata	4642	1569	6206
Androgenic alopecia	181	112	293
Psoriasis	2015	1700	3715
Total	35948	44450	80398 (34.60%)

Table 4: Details of various infectious disorders and also hair disorders

Conditions	Males	Females	Total
1) Fungal infections	10055	12248	22303
Tinea capitis	671	187	858
Tinea corporis	1043	722	1765
Tinea pedis	1440	2831	4271
Tinea manuum	596	3454	4050
Tinea unguium	639	974	1613
Tinea cruris	619	54	673
Pityriasis versicolor	4496	1939	6435
Chronic paronychia	551	2087	2638
2) Viral infections	12356	8937	21293
Molluscum contagiosum	996	607	1603
Chicken pox	865	648	1513
Herpes zoster	646	380	1026
Herpes simplex	578	589	1167
Warts	9271	6713	15984
3) Bacterial infections	4601	2627	7228
Impetigo	2110	1426	3536
Pyoderma	995	664	1659
Folliculitis	1262	424	1686
Furunculosis	234	113	347
4) Disorders affecting hair	5514	2655	8169
Alopecia areata	4642	1564	6206
Androgenic alopecia	181	112	293
Hirsutism	-	124	124
Tinea capitis	672	188	860
Telogen effluvium	11	373	384
Hair loss (non specific)	05	38	43
Traction alopecia	03	256	259

Table 5: Some Disorders included in "Others" category

Conditions	Males	Females	Total
Papular urticaria	2215	1987	4202
Hand foot mouth disease	477	384	861
Plantar hyperkeratosis	514	1348	1862
Terra firme forme	02	07	09
Skin tags	1137	650	1787
Traction alopecia	03	256	259
Frictional dermatitis	67	82	149
Milia	218	218	436
Apthous ulcers	24	11	35
Dermatosis papulosa nigra	10	27	37
Total	4667	4970	9637

Figure 6 details various hair disorders observed in our study. Notwithstanding high ambient temperature throughout the year, high humidity and intense sun rays, the prevalence rates of miliaria were surprisingly low (0.61%). Air-conditioning facilities and a relaxed work culture may be the plausible explanation for the low prevalence. Other workers^{2,4} had also reported similar prevalence rates.

Urticaria accounted for 4.1% of the cases in our study, similar to a report from Qatar,⁴ while other investigators from the region had noted less prevalence.^{1,2}

Apart from a study on the prevalence of atopic dermatitis among school children in Oman,⁵ there are no in-depth studies vis a vis skin diseases. The findings of this study however may not be applicable to populations from other countries due to varying ethnicity and geographic conditions. We have included both the walk-in as well as referred cases, hence the numbers may have increased due to duplication in some cases. Also, our population does not exclusively represent cases from north Batinah as it consisted a mix of the native as well as the local migrant population which was employed there.

This study provides an important insight into the spectrum and prevalence of cutaneous conditions in patients attending dermatology clinics in north Batinah governorate of Oman. It represents a diverse mix of people and the results may reflect countrywide prevalence. It will provide a basic framework and will contribute to better understanding of the patient care delivery needs and improved health care planning in the country.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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