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Original Research Article

An overview of skin disorders in under-fives over a ten-year period in a tertiary institution in South: South, Nigeria

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ABSTRACT

Background: Skin disorders can be a significant cause of distress to both children and their care-givers. The scope of prevalent skin disorders differ from one country to the other. Therefore an insight into the occurrence, patterns and distribution of skin disorders in a target group will be beneficial to inform care and provide support that is relevant to that target population. The aim of this study is to determine the skin problems prevalent amongst children that are five years and below managed at the University of Port Harcourt Teaching Hospital, Alakahia, Nigeria.
Methods: This was a retrospective cross sectional study of children five years and below that visited the dermatology outpatient clinic at the University of Port Harcourt Teaching Hospital, Alakahia between the period of January 2006 and December 2015.
Results: There was equal ratio of male to female patients with slight female preponderance. The eleven most common lesions were papular urticaria, atopic dermatitis, scabies, warts, vitiligo, molluscum contagiosum, tinea corporis, impetigo, seborrhoeic dermatitis, pityriasis rosea and tinea capitis.
Conclusions: Skin disorders are common among children under five years. Allergic skin disorders, bacterial, viral and fungal skin infections, skin infestation (scabies) and pigmentary disorders (vitiligo) are major skin manifestations in this study.

Keywords: Skin disorders, Under- fives, Scabies

INTRODUCTION

The under - five age period is a critical point in the life of a child particular in the Sub Sahara Africa where they are prone to infectious diseases which are a major cause of morbidity. The major cause of mortality in this group is pneumonia, malaria, HIV/AIDS, neonatal sepsis, diarrhoeal diseases and meningitis.[1]

Malnutrition is also a contributory disease to under five mortality within this region.[2,3] Skin diseases like Kaposi sarcoma, herpes zoaster, pruritic papular eruptions, seborrhoeic dermatitis, molluscum contagiosum have been seen in high frequency in HIV/AIDS which is one of the major causes of death in the under- fives in Sub Saharan Africa.[15] They could be a sign of the possible etiology such as skin rashes in neonatal sepsis, meningitis; and insect induced papular urticaria as in case of malaria. They could also be a direct cause of morbidity and mortality such as scabies.

The under- five age group have been noted to form the majority with the burden of skin diseases as seen from studies done in other centres.[8,18] It is necessary to know the major causes of skin diseases in the under- fives in an area so that it could be adequately prepared for by the health institutions and health care providers thus the relevance of this study.

METHODS

This a retrospective descriptive cross-sectional study done at the dermatology outpatient clinic (DOPC), of the University of Port Harcourt Teaching Hospital, Alakahia, Rivers state. The clinic is a weekly one and is run by consultant dermatologists. The data was collected from the register of new patients seen between the periods of January 2006 to December 2015. Every child aged five years and below presenting with a fresh complaint of a skin disorder at the dermatology outpatient clinic of the University of Port Harcourt Teaching Hospital, Alakahia, Nigeria between January 2006 and December 2015 was all included. Patients with incomplete data were excluded. Anonymous data such as the age of child, sex of the child, date of initial visit and the diagnosis were retrieved and entered into software and analyzed using Microsoft Office Word Excel 2007. Being a retrospective observational study based on administrative data, formal consent was not sought; the researchers however did obtain the approval of the officer in charge of the records to obtain the needed data.

RESULTS

The total number of under- fives patients that presented to the DOPC within the period was 412 constituting 7.3% of all new patients (5619) seen within that period (Table 1). There was equal ratio of male to female patients with slight female preponderance (Figure 1).

Table 1: Ratio of males and female seen in the DOPC.

Year	Male	Female	Total	Ratio
2006	11	19	30	0.6:1
2007	20	27	47	0.7:1
2008	23	15	38	1.5:1
2009	32	26	58	1.2:1
2010	26	27	53	1:1
2011	27	31	58	0.9:1
2012	19	23	42	0.8:1
2013	6	13	19	0.5:1
2014	12	14	26	0.9:1
2015	23	18	41	1.3:1
Total	199	213	412	0.9:1

Papular urticaria was the most commonly observed skin disorder in children under the age of five (Table 2 and Figure 2) with a slight preponderance in females (Table 3).

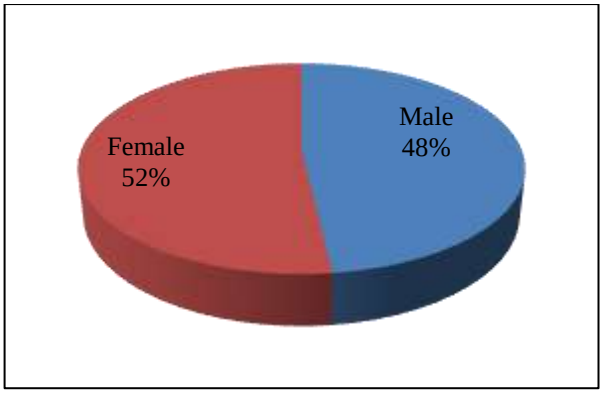

Figure 1: Ratio of male: female (%) seen in the DOPC.

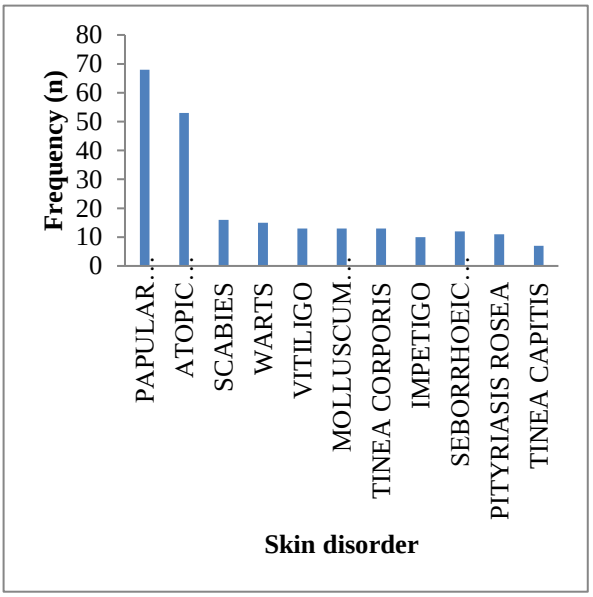

Figure 2: The incidence of the eleven most common skin diseases amongst the under-fives seen in DOPC over the period.

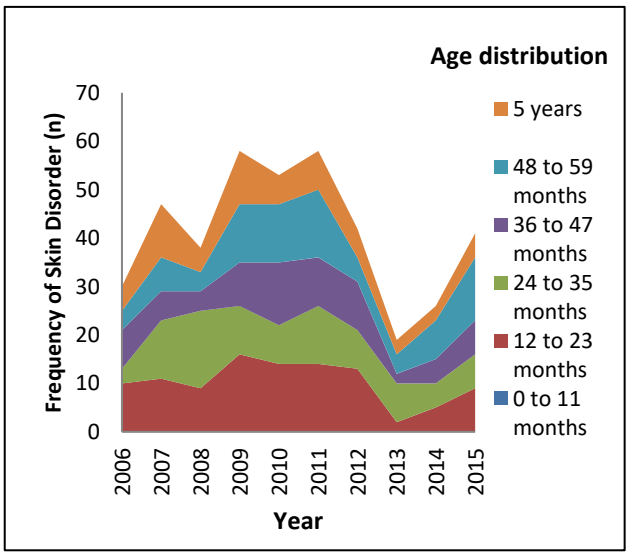

Figure 3: Age distribution of dermal disorders.

Table 2: The incidence of the eleven most common skin diseases amongst the under-fives seen in DOPC over the period.

Skin disorders	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Total
Papular urticaria	10	9	2	9	9	9	7	3	7	3	68
Atopic dermatitis	2	9	10	4	11	5	1	5	1	5	53
Scabies	0	0	2	2	1	5	2	1	0	3	16
Warts	0	0	1	2	2	5	2	0	2	0	15
Vitiligo	2	0	1	1	3	3	1	0	2	0	13
Molluscum contagiosum	0	4	1	1	0	2	1	0	1	3	13
Tinea corporis	2	1	0	1	1	4	1	0	2	1	13
Seborrhoeic dermatitis	0	1	2	1	1	1	1	0	2	3	12
Pityriasis rosea	0	1	1	1	1	2	2	2	0	1	11
Impetigo	0	2	1	1	1	0	2	1	0	2	10
Tinea capitis	0	0	1	2	2	1	1	0	0	0	7

Table 3: The incidence of the eleven most common skin diseases amongst the under-fives seen in DOPC over the period (sex distribution).

Skin disorders	Male	Female
Papular urticaria	30	38
Atopic dermatitis	28	25
Scabies	7	9
Warts	3	12
Vitiligo	4	9
Molluscum contagiosum	8	5
Tinea corporis	10	3
Seborrhoeic dermatitis	6	6
Pityriasis rosea	5	6
Impetigo	5	5
Tinea capitis	5	2
Total	111	120

Table 4: Age distribution of dermal disorders.

Year	0-11 months	12-23 months	24-35 months	36-47 months	48-59 months	60 months	Total
2006	0	10	3	8	4	5	30
2007	0	11	12	6	7	11	47
2008	0	9	16	4	4	5	38
2009	0	16	10	9	12	11	58
2010	0	14	8	13	12	6	53
2011	0	14	12	10	14	8	58
2012	0	13	8	10	5	6	42
2013	0	2	8	2	4	3	19
2014	0	5	5	5	8	3	26
2015	0	9	7	7	13	5	41

The minimum age that presented to the dermatological clinic within the period was 12 months old (Table 4) and the most number of cases seen were within the age category of 12 months to 23 months (Table 4 and Figure 3).

The number of mixed infections was observed to be 35 of which about half (n- 16) involved some variant of tinea infection.

Lesions that were ≤ 5 cases within the ten years period included epidermodysplasia verruciformis, fixed drug reactions (FDE), follicular keratosis, granuloma annulare, ichythyosis, kerion, lichen planus, psoriasis, lichen

striatus, pityriasis lichenoides et varioliformis acuta (PLEVA), pruritic papular eruption, (PPE), pompholyx, and post inflammatory scar.

Rare skin disorders with just a case reported within the period were actinic keratosis, cutaneous larva migrans, epidermolysis bullosa complex, fissures on the feet, lymphedema, mastocytosis, palmoplantar keratoderma, paranonychia, photodermatitis, phyrnoderma, steatocystoma multiplex, and xerosis.

Apart from warts, other skin tumours which were mainly benign constituted about 2.4 % (11) of all the skin disorders seen within the period and they include haemangioma, keloids, neurofibromatosis, nevi, seborrhoeic keratosis and syringoma.

DISCUSSION

The study showed a slight preponderance of female patients in the different age categories in attendance to the DOPC over the ten- year period as seen in (Table 1 and Figure 1). This can be approximated to be of equal attendance. At this age group hormonal differences have not set in, unlike the adolescent period where hormones can actually be casual factor in certain skin diseases like acne. The visit to the clinic is dependent on how the caregiver perceives the skin disease to be severe. Although the overall morbidity was found to be more in females from a study done in India however few studies have been done to determine sex prevalence of dermatological manifestations in this age group.[5] In a study done amongst school children within the same study area showed slight male preponderance.[6]

The eleven most common skin diseases found amongst the under-fives is seen in (Table 2 and Figure 2). It showed that papular urticaria was the most common followed by atopic dermatitis. This finding is different from that noted in school children within that same study area.[6] A study done by similar authors within the same center years almost a decade back showed fungal skin infections to be the most common disorders affecting patients below 16 years and atopic dermatitis was the most commonly seen within this age group.[7] A study done within the same country but in a different center showed under-fives to form the majority of children with skin diseases in the out-patient paediatric clinic and having pyoderma as the commonest dermatological lesion.[8] These differences noted can be explained by the choice of doctor which a caregiver chooses to see if the child under care has a dermatological lesion. The purpose of visit to a paediatrician may not have been just due to a dermatological lesion accounting for the disparity in the various studies.[9,17]

Papular urticaria is an allergic reaction due to several causes including bites, stings, heat and chemicals. This variety of causes can be an explanation of it being the commonest dermatological manifestation. This age category represents a time of developing resistance and building up immunological responses to infections and external stimuli.[10] The common causes as reflected in this study is similar to that seen in most studies on common skin diseases in childhood.[4,6,7,8, 11,17,18] These can be summarized into allergic conditions, dermatitis, infestations, bacterial, viral and fungal skin infections. Vitiligo has not been reportedly to be common amongst children when compared to adults, however being a commonly acquired depigmentation disorder it can occur at any age and it can make the caregiver to seek the services of a dermatologist or be referred to one.[12, 13] Scabies, impetigo, eczema, tinea, ulcer and burns were noted to be the most common among the under-fives in a rural hospital in Ethopia.[17] Most cases of burns at the centre present to the Burns and Plastic Surgery unit of the hospital and few cases present to the paediatric clinic as this was recommended in a studies done earlier on; which showed under- fives forming a majority of those affected.[20, 21]

Seborrhoeic dermatitis has been shown to have a positive predictive value with HIV/AIDS in adults in a study done in another center within the same country but the same could not be said of the paediatric age group.[15,18] Benign skin tumours were very few as noted in the study; as also seen in other studies.[18,19] A study done in this same center showed that neurofibromatosis in under-fives was about 11.1% (2) of all paediatric cases seen within that period.[16]

The equal ratio of males to females seen amongst the top eleven diseases is a reflection of the true proportion of skin diseases among the under -five as earlier explained. In the study as demonstrated by (Figure 3), the minimum age that presented to the dermatological clinic within the period was 12 months old. It may not necessarily mean that those in the younger age group (0-11months) did not suffer from dermatological disorders but within this delicate period they would have been more likely to visit the paediatrician than the dermatologists.[9] The attention by caregivers to this age group and lack of exposure to harsh external stimuli such as the sunlight by constant covering with clothes and use of sun shielding instrument such as umbrellas may also contribute to less occurrence of dermatological lesions.

The child at this age is often at home with activities been limited to eating and sleeping hence reduced risk of skin infections from contact with other persons outside the family. The skin at this age is immature, thinner and more prone to water loss and dehydration that can predispose to skin disorders like itching and ulcers.[13] This age group (0-11months) is known to have weak immunological responses thus making skin allergies less likely to occur.

CONCLUSION

Allergic disorders such as papular urticaria and atopic dermatitis, bacterial infections (impetigo) viral infections (warts and molluscum contagiosum), fungal infections

(seborrhoeic dermatitis, tinea corporis and tinea capitis) infestation (scabies) and pigmentary disorders (vitiligo) are major skin manifestations in this study. These can be a pointer to more systemic illnesses that plague children in the Sub Saharan Africa.

Recommendations

Skin care for under-fives should be incorporated into the general clinic visits. All primary care physicians should be aware of common causes of skin diseases and make appropriate referrals.

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Ethical approval: The study was approved by the institutional ethics committee

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