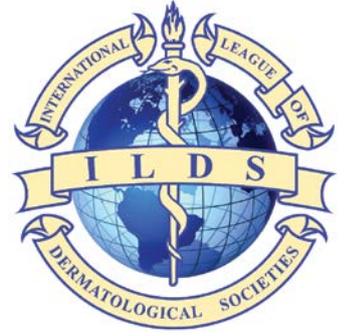
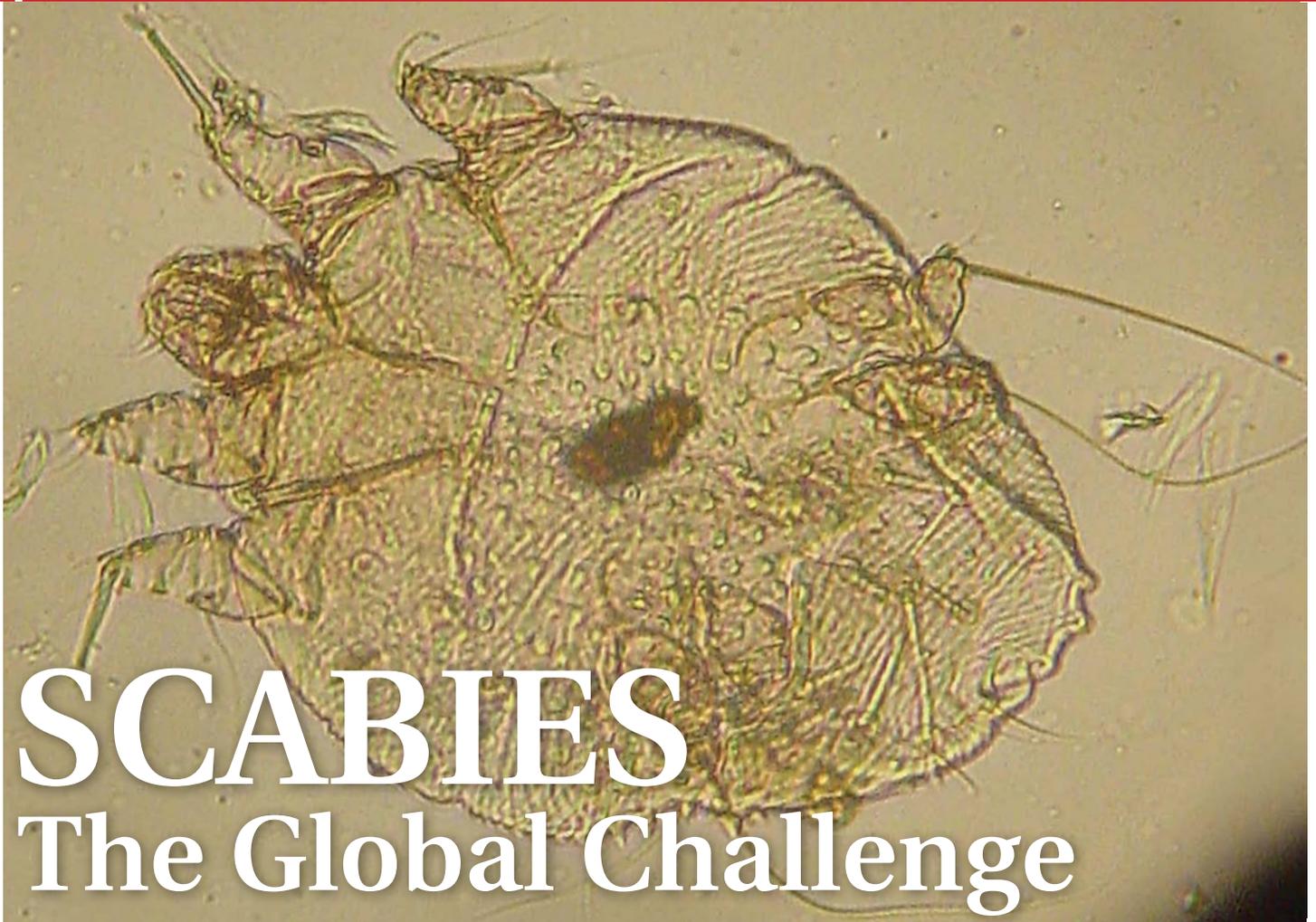


Community Dermatology Journal



ISSUE No. 20

Comm Dermatol J 2015;11:13-28



SCABIES The Global Challenge

Some highlights of an IACS discussion held at the World Congress of Dermatology, Vancouver, 8 June 2015.

Claire Fuller (UK, chair) emphasised the need for a global initiative to manage the disease burden of scabies; the principal challenges include the medical complications of secondary streptococcal pyoderma, the lack of a diagnostic test and the need for better understanding of mite immunology, improved treatment and control. Scabies is estimated to affect around 130 million people, notably in sub-Saharan Africa and tropical Latin America. Streptococcal pyoderma is an underestimated complication, with the risk of renal impairment which ranges from asymptomatic but persistent haematuria to nephrotic syndrome secondary to acute post streptococcal glomerulonephritis¹.

Continued on page 2...

Contents

13 Lead Article

Scabies – the Global Challenge

Christopher Lovell

15 Cross-sectional study of the prevalence of dermatological conditions in a cohort of HIV-infected children attending an HIV clinic in Muheza, Tanzania

Emma Tobjörk, George Mtove, Veneranda Bwana, Abubakary Mziray, Geoffrey Makenga, Hugh Reyburn and Rachael Morris-Jones

20 Skin Care for All: a low cost self care public health programme as a post-2015 community dermatology development agenda

Saravu R. Narahari

23 The impact of skin disease on patients in Cambodia – a survey and simple needs assessment

S Mey, LC Fuller and C Bendick

The diagnosis is clinical (even experienced dermatologists can miss it!). Skin scrapings are often unhelpful (adhesive tape stripping gives better results); dermoscopy is useful in trained hands². Optical confocal skin microscopy shows promise, but is not generally available. There have been success stories in treatment; single dose ivermectin administration (160-250 µg/kg) reduced the prevalence of scabies from 25% to 1% in a community based programme in the Solomon Islands. However, drugs may be prohibitively expensive or unavailable – the individual may have to choose between treatment or food! Ivermectin is marginally superior to 1% lindane lotion, although the response can be delayed. Ivermectin is not be equally effective in all stages of the life cycle of the parasite, especially juvenile forms; the drug is also unable to penetrate the hard shell of the mite egg.³

Andrew Steer outlined the progress of the International Alliance for the Control of Scabies (IACS)^{4,5}, an organization comprising 106 members in 24 countries. IACS has a thriving website www.scabiescontrol.org, and has supported a systematic review of treatments. He stressed the need to develop clinical guidelines and diagnostic standards, and to link with current networks such as APOC and GAECF.

Other speakers described progress in scabies control in resource - poor settings. **E Wendemagegn** presented data from Ethiopia, where 83% of the population lives in a rural environment. Scabies in children responds to 5% sulphur ointment. Ivermectin is effective, but can take 2 weeks to obtain in Ethiopia. **Henning Grossman** commented that ivermectin is available only for veterinary use in Tanzania. **Gioconda Gaudiano** reported a successful programme of scabies and intestinal parasitosis control in island regions of Panama, where scabies is especially common in patients with albinism; the scabies prevalence of 60-80% was reduced to 2%. Clothes were kept in a plastic bag for 1 week. Ivermectin has proved safe in small children. **Margot Whitfield** described the value of nurse – led community clinics in Fiji. Single – dose ivermectin was as effective as 3 days of benzyl

benzoate. Topical permethrin has replaced benzyl benzoate as standard treatment since 2008. There has been a lasting reduction in prevalence of both scabies and impetigo. **Kate Mounsey** (Australia) outlined some of the challenges in a community-based programme, including increased population mobility (e.g. travelling for funerals), difficulties with follow up, overcrowding and lack of washing facilities, together with the high infectivity of an individual with crusted scabies. Scabies is very common in indigenous populations in the northern territories of Australia, where complications of secondary streptococcal infection, including rheumatic fever and acute renal failure, are among the commonest in the world.

There remain several other challenges in the diagnosis and eradication of scabies as a public health problem, including *in vitro* and *in vivo* resistance of the mite to ivermectin and permethrin. Ivermectin is a lipophilic drug and it is poorly distributed in the elderly stratum corneum, perhaps necessitating additional topical therapy. Mass vaccination is an unlikely solution in the foreseeable future and at present a serological diagnostic test is not available⁶.

CRL

References

1. Chung SD, Wang KH, Huang CC *et al* Scabies increased the risk of chronic kidney disease: a 5-year follow-up study. *J Eur Acad Dermatol Venereol* 2014;**28**:286-292.
2. Walter B, Heukelbach J, Fengler G *et al* Comparison of dermoscopy, skin scraping, and the adhesive tape test for the diagnosis of scabies in a resource-poor 2/setting. *Arch Dermatol* 2011;**147**:468-473.
3. Mohebbipour A, Saleh P, Goldust M *et al* Comparison of ivermectin vs lindane lotion 1% for the treatment of scabies. *Clin Exp Dermatol* 2013; **38**:719-723.
4. Engelman D, Klang K, Chosidow O *et al* Towards the global control of human scabies: introducing the International Alliance for the Control of Scabies. *PLoS Negl Trop Dis* 2013; **8**: 7:e2167.
5. Hay RJ, Steer AC, Chosidow O *et al* Scabies: a suitable case for a global control initiative. *Curr Opin Infect Dis* 2013;**26**:107-109.
6. Thomas J, Peterson GM, Walton SF *et al* Scabies: an ancient global disease with a need for new therapies. *BMC Infect Dis* 2015;**15**:250.

LETTER

An Update on Honey

Terence Ryan, userry282@aol.com

Honey has been used to heal wounds for thousands of years. For only a lifetime it has been sold in shops in a pasteurised form free of bacteria. Such honey has some wound healing properties but not nearly as much as raw honey.

Recent studies have shown that honey fresh from the hive is full of bacteria harmless to humans, known as lactobacilli, and these protect the bee larvae and are killers of many of the bacteria most harmful to humans. There is a literature growing around successes with MRSA, dental abscesses, pressure ulcers and other wounds.

Recommendation: use honey straight from the hive that is less than a week old.

Vásquez A, Forsgren E, Fries I, Paxton RJ, Flaberg E, *et al.* (2012) Symbionts as major modulators of insect health: lactic acid bacteria and honeybees. *PLoS ONE* 7, e33188.



Cross-sectional study of the prevalence of dermatological conditions in a cohort of HIV-infected children attending an HIV clinic in Muheza, Tanzania

Emma Tobjörk², George Mtove¹, Veneranda Bwana¹, Abubakary Mziray¹, Geoffrey Makenga¹, Hugh Reyburn^{1,2} and Rachael Morris-Jones³

¹ National Institute for Medical Research, Amani Centre, Tanzania

² London School of Hygiene and Tropical Medicine, UK

³ King's College Hospital, UK

Contact details: Emma Tobjörk, 18 Hamlet Close, Huntingdon, PE29 1PD, UK, emma.tobjork@gmail.com

Financial support: The Finnish Medical Association and the travel fund of London School of Hygiene and Tropical Medicine.

KEY WORDS

HIV infection, children, skin disease, quality of life, Tanzania community clinics

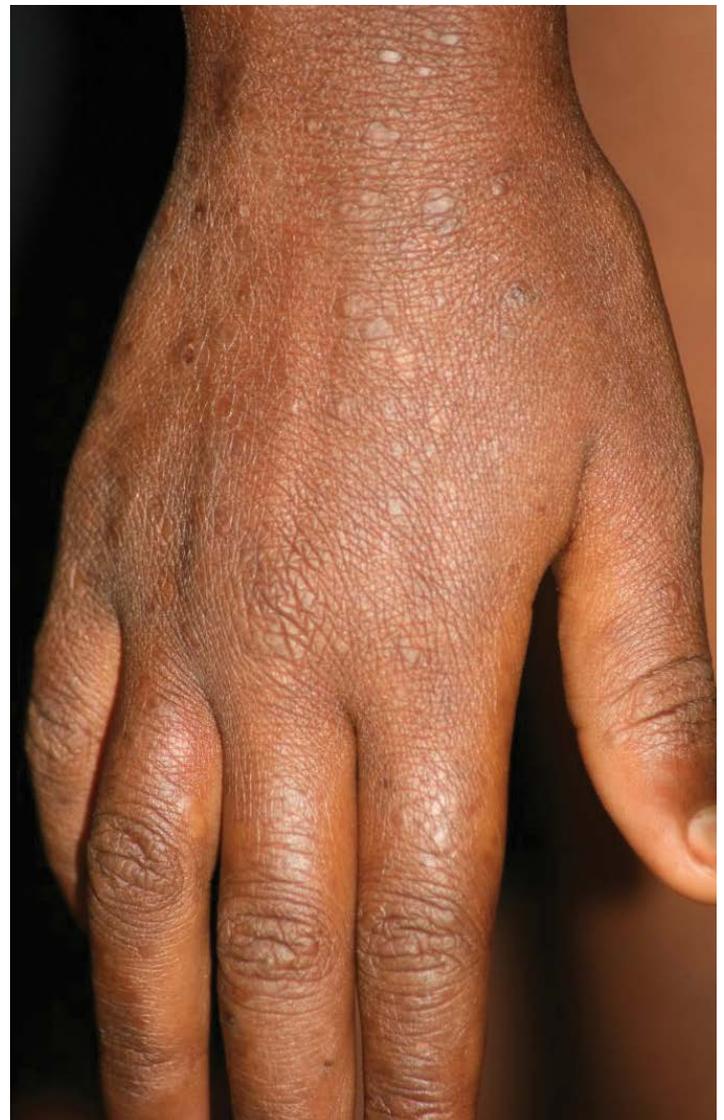
Abstract

Skin diseases are more common and frequently more severe in the context of HIV infection. However, there are few studies examining the prevalence of skin diseases in HIV-infected children in the sub-Saharan African region, where there is a significant burden of HIV/AIDS. We performed a cross-sectional study to assess the prevalence of skin diseases, including examination of the oral mucosa, in HIV-infected children regularly attending an HIV clinic in Muheza, Tanzania. Among the 115 HIV infected subjects aged 1-14 years, of which 93.9% (107/114) were on antiretroviral therapy, we diagnosed 82.6% (95/115) with at least one dermatological condition. The results indicate that skin disease is very common in this cohort of children, and that there may be an unmet need for diagnosis and treatment of dermatological conditions among HIV-infected children.

Introduction

HIV/AIDS is a global health problem, with an estimated 38.8 million people living with HIV worldwide in 2013.¹ The sub-Saharan African population is most heavily affected, harbouring 70% of all new infections.¹ Mortality has started to decline during the last decade¹, as coverage of ART (antiretroviral therapy) has increased, but this is contributing to persistently high prevalence even in areas of reducing incidence. Although prevalence in children is lower than adults it is estimated that 2.9 million children under 15 years live with HIV-infection in sub-Saharan Africa.¹

Among the manifestations of paediatric AIDS, infective as well as non infective skin conditions are particularly common.² Recent studies from Africa show a prevalence of 55-88% among HIV-infected children.^{3,4,5,6,7,8} The prevalence of skin diseases in HIV-infected children seems to increase with deepening immunosuppression, but good quality studies are needed to further investigate this.^{2,9,10} There is limited evidence on the effect of ART and immune reconstitution inflammatory syndrome (IRIS) on the rate of skin conditions in children, although one retrospective cohort study indicate that the rate decreases over time in children on ART.^{10,11} Dermatological diseases are often chronic and have a negative impact on the quality of life comparable to that of other major medical conditions¹², but



Picture 1. Rash of right hand of 10 year old female case of scabies. The maculopapular rash was diagnosed using the subalgorithm for papules, pustules and nodules. The history of itching and the distribution of the rash on legs, buttocks, stomach, arms, wrists and hands, indicated scabies as per the algorithm.

Continued overleaf...

there is a scarcity of data on this subject concerning children in low-resource settings.

Our study aimed to assess the prevalence, spectrum, severity and impact on quality of life of dermatologic conditions in HIV-infected children attending an HIV clinic in Tanzania.

Material and methods

Study design and sampling

A cross-sectional study of the prevalence of skin diseases was performed among HIV-infected children attending the HIV clinic at Teule Hospital, which serves for the Muheza district; it is situated in the Tanga region of Tanzania, where the reported HIV prevalence was 2.1% in 2011-2012.¹³ This is a district hospital serving a predominantly rural population among which subsistence agriculture supplemented by employment in plantations of oranges and sisal are the main means of subsistence.

Study participants were recruited during the time period 17.06-19.07.2013 from an ongoing pneumococcal vaccine trial at the HIV clinic, in which 60% of patients aged 1-14 years were enrolled at the end of our study period. Inclusion criteria for the vaccine trial were age 1-14 years and diagnosed HIV infection, and exclusion criteria were medical urgencies, thrombocytopenia, fever, and previous vaccination against *Streptococcus pneumoniae*. Ethical approval had been obtained, and consent of participation was obtained from the accompanying adult on behalf of the child.

Age	Prevalence (%)/mean
<4 years	31.3% (36/115)
5-9 years	46.1% (53/115)
≥10-14 years	22.6% (26/115)
Mean (years)	7.1, min 1.3, max 14.9, SD 3.1
Female gender	53.9% (62/115)
Rural living environment	68.5% (76/111)
Time since HIV diagnosis	
<2 years	29.0% (33/114)
3-4 years	37.7% (43/114)
≥5 years	33.3% (38/114)
Mean (years)	4.1, min 0.1, max 10.0, SD 2.3
CD4+ level (cells/μl)	
≥500	8.5% (9/106)
350-499	2.8% (3/106)
200-349	7.6% (8/106)
<199	81.3% (86/106)
WHO clinical stage of HIV	
I-II	27.3% (27/99)
III-IV	72.7% (72/99)
On ART	93.9% (107/114)
Time on ART, among those on ART	
<2 years	42.9% (45/105)
3-4 years	32.4% (34/105)
≥5 years	24.8% (26/105)
Mean (years)	3.5, min 0.1, max 8.9, SD 2.1

Table 1. Results of descriptive analysis.

Extraction of data, clinical examination and laboratory procedures

Information on demographics and medical history was collected from the study subject or the accompanying adult and extracted from the hospital patient records and the records of the vaccine trial. Questionnaires for younger (≤6 years old) and older (≥7 years old) children respectively, were based on standardised tools, and were used to assess the effect of dermatological disease on the quality of life.^{14,15} Information concerning any symptoms was obtained by interviewing the study subject and the accompanying adult.

Clinical examination of the skin, scalp and oral mucosa of the study subjects was performed in the HIV clinic by non-specialist doctors. To aid diagnosis, we used a diagnostic algorithm for skin lesions developed for AIDS endemic areas (devised by Dr Rachael Morris-Jones and Prof Roderick Hay). The algorithm is based on morphology, symptoms, and other features (fig . 1). Digital photographs of lesions were obtained and assessed by a consultant dermatologist, who was provided with clinical information about the cases, and diagnosis adjusted according to this assessment. Minor scarring or pigment change was not classified as pathological. Severity of the cases was evaluated clinically.

Data analysis

Data were double entered in Epi Data 3.1 (EpiData Association) and analysed in Stata 12.1 (Statacorp LP). Point prevalences were calculated for categorical variables and means for continuous variables, however, some continuous variables were categorised for the purpose of calculating prevalences. CD4+ cell count was categorised according to the WHO guidelines for over 5 year old children¹⁶, as we had only recorded absolute CD4+ counts. The quality of life score was calculated separately for the two age groups. 95% confidence intervals (CI) were calculated, and chi squared test performed.

Results

130 children fitted the inclusion criteria. Consent was obtained for 115 of the 116 children that we attempted to recruit, and these were included in the study. The demographic data and data relating to HIV infection are shown in table 1. The mean age was 7.1 years, and the mean time since diagnosis of HIV was 4.1 years. 81.3% had a current CD4+ cell level of <199 cells/μl and 72.7% currently had WHO clinical stage III-IV. 93.3% were on ART and among those the mean time on ART was 3.5 years.

82.6% of the study subjects were diagnosed with at least one skin condition. Infections were most common, with a majority of subjects diagnosed with at least one infectious condition, of which scabies and tinea capitis were the most common (table 2). Atopic dermatitis was the most common non-infectious condition (table 2). Almost half of cases had more than one condition; about a third of the cases were severe, and more than half of the cases had a poor quality of life score in both age groups (table 2). The figure legend of picture 1 describes how the diagnostic algorithms were used for diagnosis for one of the cases.

Discussion and conclusion

Our study found a high prevalence of skin disease in this cohort of HIV-infected children, despite attending an HIV clinic regularly

Subjects diagnosed with mucocutaneous conditions	
≥1 mucocutaneous condition, any type	82.6% (95/115)
≥1 infectious mucocutaneous condition	58.3% (67/115)
≥1 bacterial mucocutaneous condition	13.9% (16/115)
Secondary bacterial infection of rash	4.4% (5/115)
Ecthyma	2.6% (3/115)
Impetigo contagiosum	2.6% (3/115)
Impetigo bullosum	0.9% (1/115)
Staphylococcus scalded skin syndrome	0.9% (1/115)
Angular cheilitis	0.9% (1/115)
Balanitis	0.9% (1/115)
Folliculitis	0.9% (1/115)
≥1 viral mucocutaneous condition	7.0% (8/115)
Plane warts	4.4% (5/115)
Chicken pox	1.7% (2/115)
Herpes simplex infection	0.9% (1/115)
Genital warts	0.9% (1/115)
≥1 fungal mucocutaneous condition	33.0% (38/115)
Tinea capitis	24.4% (28/115)
Tinea corporis	3.48% (4/115)
Oral candidiasis	2.6% (3/115)
Tinea facialis	1.7% (2/115)
Tinea pedis	0.9% (1/115)
Onychomycosis	0.9% (1/115)
Pityriasis versicolor	0.9% (1/115)
≥1 parasitic mucocutaneous condition	24.4% (28/115)
Scabies	19.1% (22/115)
Insect bite reaction	4.4% (5/115)
Myiasis	0.9% (1/115)
≥1 mixed infectious mucocutaneous condition	1.7% (2/115)
Kerion	1.7% (2/115)
≥1 non-infectious mucocutaneous condition	46.1% (53/115)
Atopic dermatitis	11.3% (13/115)
Post inflammatory pigment change	6.1% (7/115)
Scarring alopecia	4.4% (5/115)
Traumatic wound	3.48% (4/115)
Scars from chicken pox	3.48% (4/115)
Other scars	2.6% (3/115)
Dry skin	2.6% (3/115)
Benign migratory glossitis	2.6% (3/115)
Other rash, unidentified	2.6% (3/115)
Irritant dermatitis	2.6% (3/115)
Lichen simplex	1.7% (2/115)
Pruritus without rash	1.7% (2/115)
Follicular eczema	1.7% (2/115)
Scarring from shingles	1.7% (2/115)
Burn	0.9% (1/115)
Shaving folliculitis	0.9% (1/115)
Benign labial macule	0.9% (1/115)
Congenital naevi	0.9% (1/115)
Prurigo nodularis	0.9% (1/115)
Aphthous ulceration	0.9% (1/115)
No of conditions diagnosed per subject	
0	16.5% (19/115)
1	43.5% (50/115)
2	27.8% (32/115)
≥3	12.2% (14/115)
Severity of cases	
Mild	31.9% (30/95)
Moderate	38.3% (36/95)
Severe	30.5% (29/95)
Poor quality of life score	
Age ≤6 years	57.9% (22/38)
Age ≥7 years	56.0% (28/50)

and the majority being on ART. The study also indicates that the quality of life was affected negatively in over half of cases. The result is similar to the 85% prevalence found in a study on paediatric patients of HIV clinics in Dar es Salaam, Tanzania.⁴ Due to the lack of a HIV negative comparison group in our study, we cannot infer that the high prevalence of dermatologic diseases is due to HIV-infection. However, there is previous evidence showing that HIV-infected children have higher rates of skin diseases.⁶

The high prevalence found in our study subjects, who were regularly reviewed in an HIV clinic, reflect the often relapsing and chronic course of skin conditions in HIV-infected individuals, but could also imply that these conditions are under-diagnosed by health care professionals in this setting. The results are in line with a previous Tanzanian cross-sectional study on patients admitted to medical wards, which showed that about 60% had a skin condition, but two thirds of the dermatological cases were overlooked.¹⁷ Our study also shows that skin conditions affect the quality of life negatively in these HIV-infected children, by causing discomfort and by affecting sleep, mood, and activities of daily life. Most of the skin conditions diagnosed in our study group would be treatable with locally available medication. We have shown that there is an unmet need for diagnosis and treatment of these conditions within our study population.

Based on experience from conducting this study, we confirm the conclusion drawn by Mahé et al¹⁸, that the use of diagnostic algorithms could aid health care professionals in low resource settings with no access to dermatologist services to diagnose and treat dermatological conditions more efficiently. In our study, we were unable to validate the photographic diagnosis compared to a dermatologist actually examining the patient, and this might form a useful future study.

Our study showed that photographing skin conditions on site and obtaining a dermatology consultant's diagnosis and suggested treatment based on the digital photographs was possible in a peripheral location in Tanzania, implying that store-and-forward teledermatology is feasible in this and other similar settings. With internet connection and mobile phones becoming more widely available in sub-Saharan Africa, teledermatology has potential to aid in the provision of expert services in the many peripheral hospitals and clinics in Africa with little or no access to specialist care. A review comparing teledermatology with clinic-based dermatology concluded that the store-and-forward modality has a diagnostic concordance that is acceptable, but treatment outcomes are slightly inferior to in person care by a dermatologist.¹⁹ However, in peripheral hospitals with no access to clinical dermatology services, this might still be acceptable and the merits of teledermatology in this type of setting need to be investigated further, and the care outcomes compared to that of non specialist care that is the only available care in many areas.

However, consideration needs to be given to patient confidentiality and data protection, in order for photographs to be sent, stored and disposed of in a safe manner. In addition, compared to having a dermatology specialist on site, teledermatology is a time consuming process in terms of the referrer taking, coding and sending photographs together with case summaries, and the specialist considering the diagnosis and feeding that opinion back via email. However, the process of teledermatology can be useful as an educational tool enabling

Continued overleaf...

Table 2. The prevalence, severity and effect on quality of life of mucocutaneous disease.

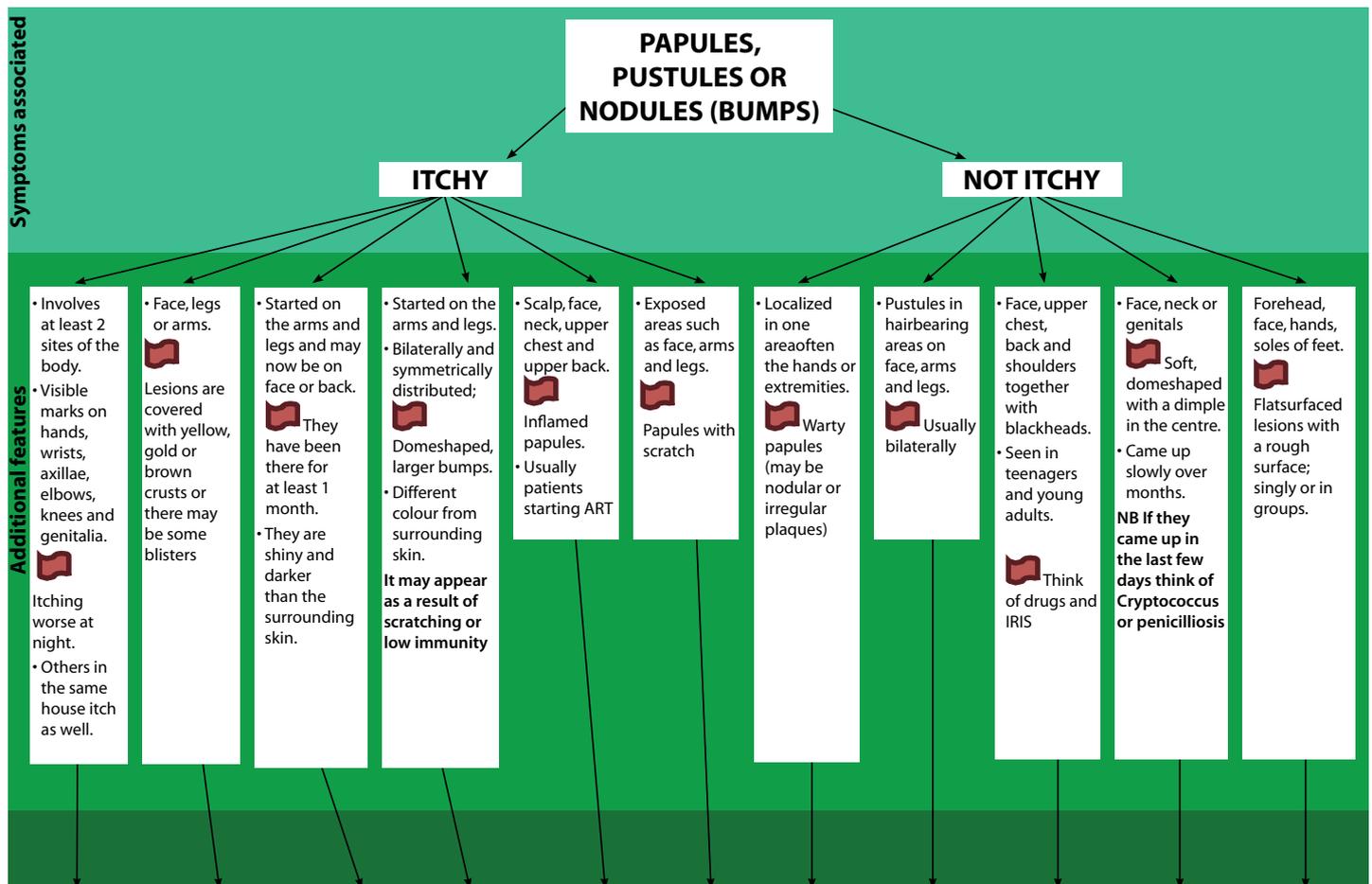


Figure 1. Subsection of diagnostic algorithm (papules, pustules or nodules). Devised by Prof Roderick Hay and Dr Rachael Morris-Jones.

non-specialists in the field to become more competent in skin diagnoses through feedback from the dermatology specialist on the definitive diagnosis. Previous experiences of teledermatology from African, Asian and South American countries have shown that 79% of users who referred dermatology cases felt that the service improved management of the cases.²⁰ A South African study showed that diagnostic concordance between the referring primary care givers and the dermatologists increased quickly when using store-and-forward teledermatology, showing its potential as a tool to improve diagnostic skill.²¹ The process is likely to be an affordable and feasible way of improving care of dermatologic conditions in low-resource settings.

The main design limitations of our study are the cross-sectional design, the lack of a non HIV-infected comparison group, and the limited sample size. A major methodological limitation was that the physical examination of the study subjects was performed by generalist doctors and not by a dermatology specialist.

We conclude that there is a need for increased attention to the diagnosis and treatment of skin diseases affecting the quality of life of HIV-infected children attending HIV clinics in this setting, and suggest further research into the possibilities of teledermatology and the use of diagnostic algorithms as means of supporting medical staff in settings with no access to specialist dermatology services.

Acknowledgements

We are grateful to London School of Hygiene and Tropical Medicine (U.K.), the National Institute for Medical Research

(Tanzania) and Teule Hospital (Tanzania), for support and cooperation during this study, as well as to the Finnish Medical Association and the travel fund of London School of Hygiene and Tropical Medicine for financial support.

References (Endnotes)

1. Joint United Nations Programme on HIV/AIDS. Global report: UNAIDS report on the global AIDS epidemic 2013. Geneva, Switzerland: 2013.
2. Mendiratta V, Mittal S, Jain A *et al*. Mucocutaneous manifestations in children with human immunodeficiency virus infection. *Indian J Dermatol Venerol Lepr* 2010;76(5):458-66
3. Doni SN, Mitchell AL, Bogale Y *et al*. Skin disorders affecting human immunodeficiency virus-infected children living in an orphanage in Ethiopia. *Clin Exp Dermatol* 2012;37(1):15-9
4. Panya MF, Mgonda YM, Massawe AW. The pattern of mucocutaneous disorders in HIV-infected children attending care and treatment centres in Dar es Salaam, Tanzania. *BMC public health* 2009;9:234
5. Endayehu Y, Mekasha A and Daba F. The pattern of mucocutaneous disorders in HIV infected children attending care and treatment in Tikur Anbesa specialized hospital, Addis Ababa, Ethiopia. *BMC Dermatol* 2013;13:12
6. Lowe S, Ferrand RA, Morris-Jones R *et al*. Skin disease among Human Immunodeficiency Virus-infected adolescents in Zimbabwe: a strong indicator of underlying HIV infection. *Pediatr Infect Dis J* 2010;29(4):346-51
7. Umoru D, Oviawe O, Ibadin M *et al*. Mucocutaneous manifestation of pediatric human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) in relation to degree of immunosuppression: a study of a West African population. *Int J Derm* 2012;51:305-12
8. Ramadham M. Distribution, pattern and management of skin diseases among children in an HIV orphanage: a community dermatology project. *Comm Dermatol J* 2012; 7: 17-32

9. Mankahla A and Mosam A. Common skin conditions in children with HIV/AIDS. *Am J Clin Dermatol* 2012;13(3):153-66
10. Gottschalk GM. Pediatric HIV/AIDS and the skin: an update. *Dermatol clin* 2006;24(4):531-6
11. Seoane Reula E, Bellon JM, Gurbindo D *et al*. Role of antiretroviral therapies in mucocutaneous manifestations in HIV-infected children over a period of two decades. *Brit J Dermatol* 2005;153(2):382-9
12. Beattie PE, Beattie PE, Lewis-Jones MS. A comparative study of impairment of quality of life in children with skin disease and children with other chronic childhood diseases. *Br J Dermatol* 2006;155(1):145-51
13. Tanzania Commission for AIDS, Zanzibar AIDS Commission, National Bureau of Statistics, Office of the Chief Government Statistician, ICF International. Tanzania HIV/AIDS and Malaria Indicator Survey 2011-12. Dar es Salaam, Tanzania: 2013.
14. Finlay AY, Lewis-Jones MS. The Infant's Dermatitis Quality of Life Index (IDQOL). [25.03.2015]. Available from: <http://www.dermatology.org.uk/quality/idqol/quality-idqol.html>
15. Finlay AY, Lewis-Jones MS. Children's Dermatology Life Quality Index (CDLQI). [25.03.2015]. Available from: <http://www.dermatology.org.uk/quality/cdlqi/quality-cdlqi.html>
16. World Health Organization. WHO case definitions of HIV for surveillance and revised clinical staging and immunological classification of HIV-related disease in adults and children. 2007.
17. Mgonda YM, Chale PN. The burden of co-existing dermatological disorders and their tendency of being overlooked among patients admitted to Muhimbili National Hospital in Dar es Salaam, Tanzania. *BMC dermatology* 2011;11:8
18. Mahé A, Faye O, N'Diaye HT *et al*. Integration of basic dermatological care into primary health care services in Mali. *Bull World Health Organ* 2005;83:935-41
19. Warshaw EM, Hillman YJ, Greer NL *et al*. Tele dermatology for diagnosis and management of skin conditions: a systematic review of the evidence. *J Am Acad Dermatol* 2011;64(4):759-72
20. Delaigue S, Morand J-J and Olson D. Tele dermatology in low-resource settings: the MSF experience with a multilingual tele-expertise platform. *Front Public Health* 2014;2(233):1-9
21. Colven R, Shim M-H M, Brock D *et al*. Dermatological diagnostic acumen improves with use of a simple telemedicine system for underserved areas of South Africa. *Telemed J E Health*. 2011;17(5):363-9

NURSING NEWS

from the WORLD CONGRESS of DERMATOLOGY, VANCOUVER, June 2015

At the Scientific meeting Pat Kelly had her paper delivered in her absence on promoting the development of dermatology nurses to provide skin care and widen access through nursing across Africa, through the University of Cape Town course led by the Division of Nursing and supported by the Division of Dermatology. Jill Brooks presented her positive preliminary PhD research findings on improving the effectiveness of skin care for those those living with pododermatitis. During the presentations an unexpected visit was made by several ILDS Board members who conveyed their full support for dermatology nursing initiatives in the ILDS and nursing contributions to dermatology care worldwide.

The International Skincare Nursing Group, working in partnership with the Dermatology Nurses Association, also hosted an inaugural dermatology nursing leadership summit, in which nurses from different national dermatology nursing organisations -committed to working more closely together to support the nursing contribution to skin care and dermatology worldwide, building on the work of ISNG over 16 years.

Steven Ersser,

*Dame Kathleen Raven Professor of Clinical Nursing,
School of Health Care
Faculty of Medicine and Health
University of Leeds
S.J.Ersser@Leeds.ac.*

BOOK REVIEW

African Dermatology Handbook

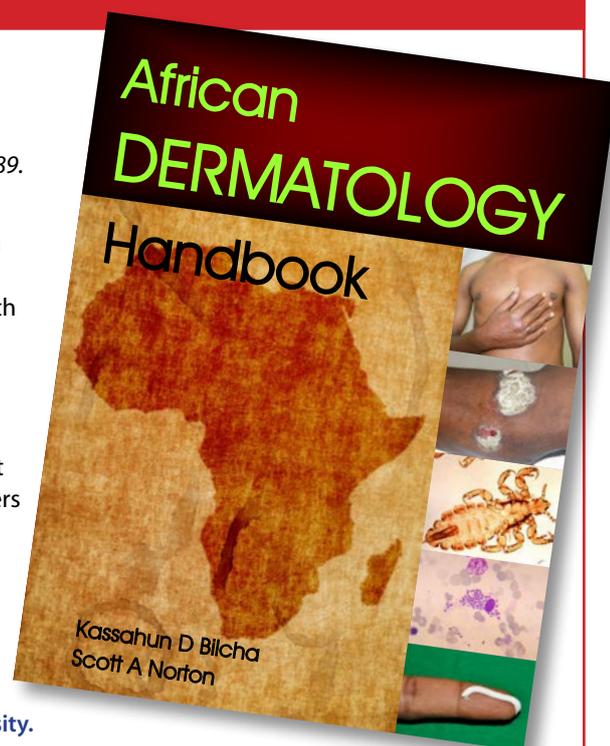
Authors. Kassahun D. Bilcha and Scott A Norton

Published by University of Gondar, Ethiopia, and available from Amazon (US), cost \$89.

Kassahun Bilcha will be familiar to many dermatologists who have worked in Ethiopia, and he has now written an excellent manual of African dermatology in collaboration with Dr Scott Norton from Georgetown University in the USA. The textbook has been handsomely produced by the University of Gondar press, with excellent illustrations and is an invaluable aid to anyone diagnosing or treating skin disease in Africa. The textbook gives appropriate weight to skin diseases which form the major burden in Africa. Around half the book is thus given over to infectious skin disease with clear explanations of aetiology, diagnosis and management. The inflammatory dermatoses are well covered, and management advice always concentrates on those agents available locally. Nutritional disorders are given a chapter of their own, reflecting the importance of recognition and treatment of children with signs of malnourishment.

The book has been aimed at African dermatology residents, as well as general physicians and other non-specialist doctors. It fully satisfies this remit, and should find itself on the bookshelf of any dermatologist interested in tropical dermatology.

Richard Weller, Dept Dermatology, Edinburgh University.



SKIN CARE FOR ALL: a low cost self care public health programme as a post-2015 community dermatology development agenda

Saravu R. Narahari

Corresponding author: S R Narahari

Director, Institute of Applied Dermatology, Uliyathadka,
Madhur Road, Kasaragod, Kerala 671124 (India).

Website: www.iad.org.in

Ph. 04994-240862, 240863

srniad@gmail.com

Introduction

The goal of 'Skin Care for All' is to aid self-management interventions provided by the concepts of community dermatology, by actively engaging the community as health care leaders to improve poor skin health. This involves alliances with patients' groups, health workers, local health governance and research organizations, international organizations, commissioning groups and public health programmes. It aims to educate health care teams with simple, low cost evidence - based public health interventions.

Chronic skin diseases occur worldwide causing huge economic losses. They encompass a range of public health issues and diseases; pandemic infections like Scabies, neglected tropical diseases such as Leprosy, Lymphatic Filariasis and Buruli ulcer, wounds and burns, Malignant Melanoma and a host of congenital and degenerative diseases.

'Skin care for all' proposes easily accessible and mostly low cost technologies that are easily adaptable as public health interventions to provide skin care and improve health related quality of life to all.

Global skin care needs

Hay and Fuller (2011) assessed the high prevalence of common skin diseases in poorer regions⁽¹⁾. Worldwide, high rates of consultation in local healthcare facilities for dermatology are burdening the already stretched health services. The Global Burden of Diseases Study (2010) also drew attention to dermatology². Mortality from skin failure is under - recognised. Early surveillance is advocated for malignant melanoma, a common skin cancer with high mortality, primarily affecting Western populations. Death from pressure ulcers, burns, bullous disorders or failure of thermoregulation at the extremes of life are rarely attributed to skin failure. Morbidity due to renal failure caused by secondary streptococcal infection following a scabies epidemic is under - reported. Mortality statistics of the Institute of Health Metrics and Evaluation, University of Washington (2012)³, lists Malignant Melanoma and other skin cancers, Decubitus ulcers, and Cellulitis. Toxic Epidermal Necrolysis, that has 30% mortality, is among many adverse effects of drugs affecting

KEY WORDS

Community dermatology, resource poor, skin care for all, self management, traditional medicine, low technology, global disease burden, neglected tropical diseases.



Fig 1. Demonstration of skin washing for patients with lymphoedematous legs (Alleppey district, Kerala state).

skin. There is much overlap between skin failure and sequelae affecting other organs. Dermatology has much to contribute to the management of the contemporary burden of depression and anxiety by its skills in managing self esteem.

The Global Organisation of Dermatology The International League of Dermatological Societies (ILDS) was founded in 1888⁴. It encouraged worldwide advancement of dermatological education and care through cooperation of societies interested in all fields of cutaneous medicine and biology. The ILDS created the International Foundation for Dermatology (IFD) in 1987 as a non-profit organisation to improve skin care in rural areas of developing countries. The International Society of Dermatology; tropical, ecologic and geographic (ISD)-founded in 1965 is supporting education with individual membership and journals. These Societies have had a great impact on the delivery of skin care worldwide. WHO wrote in 1992 that if the goals of these bodies are realized "its impact will clearly be exemplary". The IFD, faced with 25 countries in Africa which had no dermatologists, founded in 1992 the Regional Dermatology Training Centre (RDTTC)

in Tanzania. It provides a two year dermatology course and has trained 260 Allied Health Professionals as Dermatologists in 14 African Countries. The RTDC is a WHO Collaborating Centre for Dermatology, STI and Leprosy. Training schemes based on locally appropriate models have been launched in Mexico, Mali, Cambodia and Patagonia. The IFD supports this journal, which is freely downloadable (www.ifd.org.) In 2009, the ISD launched a Task Force 'Skin Care For All: Community Dermatology'⁵

Participation in the elimination of leprosy, the Global Programme for Elimination of Lymphatic Filariasis (LF), skin care nursing for wound care, HIV/AIDS and STD and African programmes for the identification of common skin diseases and cost effective prescribing are striking examples of dermatology's capacity to benefit public health globally. www.skincareforall.org exhibits 43 achievements due to structured skin care. It refers to leading public health themes such as ageing, empowerment of women, climate change, clean water, housing and 'Gardens for Health', information systems including telemedicine, interventions in collaboration with science, social and cultural factors from traditional medicine. Throughout, the emphasis is on low cost, self-help and efficacy.

Global goals to achieve care for common skin diseases

Estimates of the burden caused by skin diseases are not clearly available; it is probably huge and has affected large populations all over the world. Previous work has emphasised simple soap wash, emollients, keeping the skin moving, elevation, and stopping smoking to improve most skin conditions. Intellectual collaboration and excellent team building with forward thinking is important to achieve larger advancement in treatment delivery and research. This is especially practical when there is an affiliation of larger national and international organizations to provide support and data. Integrative medicines developed through collaboration with locally available traditional systems of medicine have benefitted common diseases such as LF. The following are already tested realistic goals to achieve *skin care for all*.

- 1. Education and training** about controlling diseases through dermatological interventions. Examples include leprosy elimination, HIV/AIDS, and LF which should be consolidated⁶. Models of team building, disease prevention, field surveillance; early identification etc could be developed into training modules from this experience. Existing training centres require continuing support and strengthening and new centres should be developed. Special needs groups such as those affected by albinism in Tanzania provide models of improved quality of life and security.
- 2. Involving patient support groups:** These can reduce the cost of care and improve Quality of Life. Patients are leaders in developing the fine tuning of the best skin care interventions⁷.
- 3. Collaborating to benefit Neglected Tropical Diseases:** There are many examples of diseases such as Leprosy, Leishmaniasis, Onchocerciasis, Lymphatic Filariasis, Buruli ulcer, and Podoconiosis in which Morbidity Control is led by dermatology. Focus on the administrative costs, and the break in transmission by vector control, have tended to create vertical programmes in which the collaborating professions lose their identity. (vide: www.skincareforall.org)
- 4. Dermatologists' involvement in Government boards:** Repeated advice to Government authorities and hospital managers not to ignore dermatology in public health

programmes is a necessity. Skin care for all is low cost and greatly improves quality of life of affected patients. Dermatologists have shown that communities can take charge of skin care.

5. Integrative Medicine: In parts of Africa the Traditional Health Practitioner (THP) is at least five times more available to the sick than the practitioner of Biomedicine⁸. There is need to train skin carers about beneficial versus harmful ways of providing traditional skin care. The effectiveness of some herbal medicine needs research support for clinical evaluations of promising formulations, correct identification and attention to dosage and drug interaction. The Institute of Applied Dermatology, Kerala, India, (IAD) has provided very good evidence of the effectiveness of integrating Ayurvedic medicine and Yoga with Biomedicine in Indian villages for selected diseases⁹. The results of integration are well proven especially in the management of Lymphatic Filariasis. There are more than seven million cases to be treated in India and the IAD is focusing on low cost interventions in some of the poorest areas.

Reaching the community with skin care

Social factors of health need to be evaluated to understand the community requirement. Economic and bureaucratic barriers dictate the simple functioning of health delivery systems especially in developing countries. Much of Community Dermatology involves seeking acceptance of disfigurement by the community; Lymphatic Filariasis is also one of the many skin diseases in which body image is greatly distorted, The social aspects of body image are central to skin care. Managing disfigurement is key to adaptation and self management as well as being welcome in society, but pursuit of beauty requires control of marketing and affordability and the effectiveness of interventions, There is concern about the provision of appropriate advice and a drive by dermatology to control sexualisation of society for a marriage market and the over-use of some interventions such as skin lightening products or UV parlours .

Sustainable health actions

Community Dermatology embraces common skin diseases and neglected tropical diseases such as leprosy. It concerns



Fig 2. Washing with Phanta, a herbal solution used to reduce bacterial contamination in leg lymphoedema, in a crowded community clinic at Malkhed.

Continued overleaf...

populations of individuals rather than individuals in a one to one relationship. It requires data on prevalence and human resources. It trains community based workers to manage common problems of the skin. Its interventions are low cost and address the needs of those with few resources; though not exclusively. These may be isolated, urban or mobile communities, often against a threatening background such as strife or climate change. UNIDERM was a five year plan for ILDS (IFD-1991-96). The programme was later given the name of Healthy Skin for All¹¹. Several successful community dermatology programmes were launched subsequently around the world. Skin care for all is proposed for next 15 years following the cumulative experience from these programmes.

Components of a programme for delivery of Skin care for all (2015-30):

1. Identify Governmental and non-governmental sites for future regional dermatology treatment centres. These centres should work with Governments to ensure that common diseases requiring low technology care do not overload hospitals but are treated by Health Care Assistants practising at the lowest primary care level.
2. Elimination of harmful, ineffective, or unnecessarily expensive remedies such skin lightening creams containing potent steroids, scarification practiced by traditional healthcare practitioners and female genital mutilation
3. Improved availability of devices needed to protect the skin, such as footwear, bandages, and sun hats.
4. Finance for careers in the field of Public Health Skin care.
5. The ILDS, comprising more than 150 dermatology associations and their taskforces, along with industry, can sponsor public health and educational programmes.
6. Collaboration to provide clean water fit for drinking, low cost effective emollients and safe disposal of sewage and waste.
7. Support for epidemiological studies, public health systems, research and integrative dermatology.
8. Support of Patient Associations, and greater emphasis on the need for interpreters in situations requiring counselling.
9. Support for Skin care provided by the nursing profession This is now led by the International Skin Care Nursing Group (ISNG). It includes the technologies of care as well as the attitude, of which altruism and kindness are important components

To conclude, skin care has to be part of the post - 2015 agenda. The innovative skin care of the last few decades for wounds, burns, Lymphatic Filariasis and the Neglected Tropical Skin Diseases needs more recognition. The web site www.skincareforall.org can serve as an introduction.

Acknowledgement The author is greatly indebted to Professor Terence Ryan, who has initiated and mentored many of these programmes, and who approves this summary.

References

1. Hay RJ, Fuller LC. The assessment of dermatological needs in resource poor regions. *Int J Dermatol* 2011; 50: 552-557.
2. Global Burden of Diseases Study 2010 [Internet] [cited 2015 Jan 27]. Available from: <http://www.thelancet.com/global-burden-of-disease>
3. Lozano R1, Naghavi M, Foreman K et al. Global and Regional Mortality from 235 causes of death for 20 age groups in 1990 and 2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 2012; 380: 2095-128.

4. International League of Dermatological Societies [Internet] [cited 2015 Jan 27]. Available from: <http://web.ilds.org/>
5. Ryan TJ. The International society of Dermatology. Task Force for skin care for all: Community dermatology. *Int J Dermatol* 2011; 50: 548- 551.
6. The third national seminar on evidence-based and integrated medicine for lymphatic filariasis, other chronic dermatoses and HIV/AIDS. *Journal of Lymphoedema* 2008 3(2) Supplement: 1-40
7. Bose KS, Narahari SR, Aggithaya GM et al. Ayurveda, yoga and self-care in patient-led support groups. The third national seminar on evidence-based and integrated medicine for lymphatic filariasis, other chronic dermatoses and HIV/AIDS. *J Lymphoedema* 2008; 3(2) supplement: 22-25.
8. Ryan TJ, Hirt HM, Wilcox M. Collaboration with Traditional Health Practitioners in the provision of Skin care for All in Africa. *Int J Dermatol* 2011; 50: 564-570.
9. Narahari SR, Bose KS, Aggithaya MG et al. Community level morbidity control of lymphoedema using self care and integrative treatment in two Lymphatic Filariasis endemic districts of South India- A non randomized interventional study. *Trans R Soc Trop Med Hyg* 2013; 107: 566-577.
10. Narahari SR, Aniruddha K. Public health systems research: evidence-based integrative medicine provides leadership in chronic care. *Current Science* 2013; 104: 695-696.
11. Chi-keong ONG, Ryan TJ. *Healthy Skin for All*, 1st edn. Oxford: International Foundation of Dermatology 1998.

JOURNAL CLUB

Anticoagulants for Buruli Ulcer?

Ogbechi J *et al. PloS Pathogens* 16 July 2015 **11**:e1005011.

In this intriguing article an international team of authors make a strong theoretical case for anticoagulation as part of the treatment of Buruli ulcer. This is an important cause of morbidity worldwide, especially in children; 5,000 new cases



are reported each year, mostly from West Africa, Australia and South East Asia. The causative organism, *Mycobacterium ulcerans*, is found in slow-flowing rivers, swamps and lakes. Because lesions are typically painless, Patients may present late. Although the organism is sensitive to antibiotics such as rifampicin with streptomycin, lesions are characterized by extensive necrosis and scarring, and recovery is slow.

The organism secretes an exotoxin, mycolactone, which decreases thrombomodulin on the surface of human endothelial cells in culture. (Thrombomodulin activates the natural anticoagulant protein C, and deficiency of thrombomodulin is linked with thrombus formation and tissue ischaemia). The authors also found thrombomodulin to be reduced in skin biopsies from Buruli ulcers. Mycolactone persists in tissues even when the organism has been eradicated.

The authors suggest that anticoagulant therapy, in addition to antibiotics, should speed recovery, and quote a clinical case report to support this view (Kanga JM *et al Bull Soc Pathol Exot* **94**:32-5).

CRL

The impact of skin disease on patients in Cambodia-a survey and simple needs assessment

S Mey⁴, LC Fuller^{1,2} and C Bendick³

¹ International Foundation for Dermatology and Dermatology Department

² Chelsea and Westminster Hospital, London UK. ³ The University of Health Sciences in Phnom Penh

⁴ Preah Kossamak-Hospital Phnom Penh

Corresponding author: Dr L Claire Fuller, Department of Dermatology, Chelsea and Westminster Hospital, London SW10 telephone +442033158169 claire.fuller@ifd.org

Conflicts of Interest: The authors declare no conflicts of interest in relation to this work

Funding: This project was supported by funds from the International Foundation for Dermatology.

What's already known on this subject?

Skin diseases are common in resource poor settings in Africa and the Indian subcontinent [eg 1].

What does this study add?

A simple needs assessment method is outlined which could be of use to others. The spectrum of dermatological disorders is shown to be similar in Cambodia and to have a significant impact on patients' life quality and personal resources.

ABSTRACT

Background

There are no studies published describing the common skin diseases in Cambodia. Reliable and comprehensive dermatology services are at an early stage of development. In order to provide information for policy makers and dermatology training course designers, a simple needs assessment was undertaken in the environs of Phnom Penh.

Objectives

The aim was to identify the common dermatoses and their impact.

Methods

2 semi-rural and 2 urban study sites were identified. Patients completed an administered questionnaire and were then examined and their diseases recorded.

Results

625 patients were assessed with 76 different diagnoses recorded, however the 10 commonest disorders accounted for nearly 60% of the cases with acne, eczema and scabies being the top three. The majority of patients had mild to moderate disease for a median duration of 12 months.

53% of patients had previously spent an average of \$US10 on treating their skin disease unsuccessfully, most notably those with scabies (65.3%).

Conclusion

Scabies, eczema and acne were the commonest dermatoses with scabies being the most costly to the patient. Educating communities and basic healthcare workers about simple management of common skin diseases with locally available treatment could significantly reduce the impact of dermatoses for the patient and community alike. We recommend this should accompany building the capacity of specialist dermatology units.

KEY WORDS

Skin disease, needs assessment, Cambodia, resource poor settings, scabies, eczema, acne.



Introduction

Assessment of need is an important way to gain objective information on the impact of disease in large communities. Cochrane levelled criticism at the institution of therapies without knowledge of their relative efficacies and risk². Hay advocated establishing a clear understanding of skin disease prior to allocating scarce resources; he recommended establishing prevalence, impact and obstacles to management prior to planning intervention³.

Continued overleaf...





Pityriasis alba

The range of dermatoses in Cambodia has not yet been well documented apart from a few case reports. Published reports of medical activities from Cambodia focus more on malaria, sexually transmitted disease, tuberculosis and HIV management.^{4,5,6}

Dermatology services and training programmes in Cambodia are well underway following the development of a Diploma Course in Dermatology at the University of Health Sciences, Phnom Penh. This was established in 2005 and has provided dermatological expertise to 38 physicians so far. Students undertake an 18 month course covering all aspects of dermatological care.

The diploma programme has been developed in collaboration between: the University of Health Sciences and hospitals/ medical institutions in Phnom Penh, (CIM (Centre for International Migration and Development), Frankfurt, Germany; Else Kröner-Fresenius-Stiftung, Bad Homburg, Germany, Cooperation Française and universities, hospitals and medical institutions in France and Germany.

As graduates of the programme start to care for dermatology patients across more provinces in Cambodia, improving understanding of the dermatological burden will be more important. Also understanding the impact of skin disease in Cambodia will enable fine tuning of subsequent national training programmes. All this information will assist the Ministry of Health to effectively plan and allocate scarce resources. It will help inform the development of a national strategy for prioritising the training and provision of skin care.

Aims of the study

The aims were to identify common dermatoses present in a range of Cambodian settings and to assess the impact of the skin disease on aspects of quality of life as well as attempt to estimate the financial burden faced by the patients.

In addition it sought to determine if the Cambodian pharmacopeia is currently adequate to handle the common dermatoses encountered.

Method

Four sampling sites were identified by the host dermatology team and the necessary permission acquired from the local medical, educational and social authorities. Ethical approval was obtained from Preah Kossamak-Hospital Phnom Penh.

The sites were selected on the bases of convenience, practicality and willingness of the local staff to participate. The location type of the sites included semi rural and semi urban but were sufficiently similar and were not intended to be contrasted with each other.

Health care personnel at the four sites facilitated the setting up of the survey sites for the study days.

Medication was purchased prior to each visit to enable distribution to the patients once they had been seen. (See Table 1)

Patients (of health facility sites), relatives and surrounding residents (of all sites) were informed of the proposed survey and invited to attend on the study day. The methods of study advertisement were left to the local staff teams.

On arrival at the study site, the aims, purpose and nature of the study was explained to all patients and their verbal consent obtained prior to participating. (Literacy rates are so variable that verbal consent was deemed most appropriate in this setting). Patients completed a simple administered questionnaire (appendix 1), collecting baseline demographics and information about the impact of their skin disorder on sleep, daily living and financial cost. Disease duration was also recorded and was categorised into four groups;

- 1 year duration or less
- Over 1 year and up to 5 years
- Over 5 years and up to 10 years
- Over 10 years.

Health awareness



Patients were then examined by a member of the dermatology team which consisted of 4 qualified specialists with tropical dermatological expertise working with local Cambodian medical interpreters where required.

The diagnoses were recorded. Additionally the severity of the disease was classified subjectively by the examining doctor into "mild", "moderate" or "severe". Although no specific measures were taken to reduce inter observer variability, there was a team discussion prior to the data collection to clarify the process.

Once all the data had been collected and the diagnosis made and recorded the patients were offered free treatment, if available. Any seriously ill patients were referred back to the Department of Dermatology of Preah Kossamak-Hospital in Phnom Pen.

The questionnaire was designed to capture routine demographics, previous treatments used, the impact of the skin disease on quality of life. Additionally the expense of treating their skin disease was asked about, in relation to an estimate of amount of money spent on food during the last month to give an idea of the percentage cost impact (see appendix 1 below).

Diagnoses were recorded, when made, for all patients and then collated into disease categories for analysis purposes. The categories chosen were as follows;

Inflammation, infection, acne, rosacea, infestation, pigmentary, keratinisation, drug related, light-related, other and unknown.

"Unknown" indicates that the skin disease could not be accurately determined in this field setting.

Results

All patients approached (626) consented to participate in the study. All but 1 of these patients had a skin disease. This patient has been excluded from all summaries, leaving 625 evaluable subjects. We do not have information on the size of the population invited that did not attend the study day or the size of the surrounding population.

The numbers of patients attending the 4 study locations were as follows: Dom Khvet Health Centre 289, Phnom Pen Orphanage 136, Sen Sok Health Centre 101 and Sen Sok School 99. The locations were simply the facility used to conduct the survey and did not represent the nature of the community invited to attend.

Demographics (Table 2)

The average age was 25 (0-87); 365 (59%) were female. Only 25 (4%) of subjects who were >16 years old (i.e. not children) did not provide an occupation. The average household size was 4.8. Only 1.4% patients had previously seen a dermatologist.

Continued overleaf...

Appendix 1: Cambodia: IFD Dermatology Needs Assessment Survey Questionnaire

Examination site		circle the relevant options		
Phnom Penh orphanage	Do Kvet Health Center	Sen Sok-School	Sen Sok Health Center	
Patient Number				
Demographics				
Sex	male	female		
Age				
Occupation				
Size of household (number of occupants)				
How much money spent on food each month?	<i>Dollars</i>			
Skin disease-history				
Duration of skin disease				
Previous treatment for skin disease?	yes	no		
Any time off work/school because of skin disease?	yes	no		
Does it prevent sleep?	yes	no		
How much money spent on treating skin disease	<i>\$ or Riel?</i>			
Examination of Skin				
What is the main skin disease?				
Are there other skin diseases?	yes	no		
List other diseases are there?				
Body site affected				
Disease severity	mild	Moderate	severe	
Treatment available in Cambodia?	yes	No	What?	



n=19) had severe disease. Disease severity was not recorded in one patient.

Availability Of Treatment

Treatment was deemed to be available locally in Cambodia for 97.1% of patients (n=607). No local suitable treatment was available for 2.6% of patients (n=16) and the availability of local treatment was unknown for 0.3% (n=2).

Previous treatment (Table 4)

62.6% of all subjects (n=391) had received previous treatment for their primary skin condition. Those with disease duration of less than or equal to 1 year are the least likely to have received previous treatment. Those with disease duration of between 1 and 5 years are more likely to have received previous treatment.

There was a statistically significant association between disease severity and whether the patient had received previous treatment ($p < 0.001$). Those with more severe disease were more likely to have received previous treatment. (Table 5)

Money spent on treatment (Table 3)

53% of patients (n=331) had spent money on their skin in the last month; the median amount was \$US10 with a range of \$0.25 to \$4000. 58.9% (n=195) of these patients spent \$10 or less.

Patients with scabies were the most likely to have spent money in the last month (n=51, 65.3%). In addition to collecting data for the amount spent on skin disease, data were also collected for the amount of money spent on food. A ratio was then calculated in order to compare the amount spent on treating their skin disease to that spent on food. For all patients spending money on both treating their skin disease and food, the geometric mean of the ratio was calculated. For all patients the geometric mean of this ratio is 0.095 (n=279) meaning that patients spent around 9.5% of the amount of money available to spend on food on treating their skin condition. The percentages ranged from 0.3% to 1333%. Those with acne or rosacea had the highest ratio for money spent on treating their skin condition relative to that spent on food of 15.6%. (Table 4)

Other aspects impacting on quality of life

30% (189) patients reported that their sleep was interrupted by the skin disease with 13% (82) taking time off school or work.

Discussion

The types of skin diseases found across these 4 settings; two semi rural and 2 semi urban, show a similar distribution to other studies performed in resource - poor settings apart from relatively low levels of superficial fungal infections.⁷ Whilst we appreciate this may not represent the true epidemiological picture of the Cambodian population it provides some data as to common skin diseases that bother patients sufficiently to attend a clinic.

Commonest diseases were eczema, scabies, acne and urticaria with the top 20 diseases accounting for 70% of the disease burden. This is similar to the data from previously published studies from other developing countries such as Egypt⁸ (top 10 accounting for 70% of all diagnoses) and Mexico⁹ (top 10 accounting for 45%).

Diseases were mainly considered "mild" in severity by the examining team. Whilst we appreciate that formal validated

Diagnosis of skin condition (Table 3)

The most common primary diagnosis was acne (n =100, 16%), followed by eczema (n=65, 10.4%), scabies (n=52, 8.3%), urticaria (n=35, 5.6%) and tinea corporis (n=30, 4.8%). The 20 most common primary skin diseases presented at the clinic are presented in Table 3. These accounted for 77% of all cases.

Types of skin conditions (Table 4)

Category of Skin Condition

Inflammatory skin conditions were the most common category of primary skin disease seen (n=178), comprising 28.5% of all primary skin conditions. Of these, 135 (75.8%) had dermatitis, 35 (19.7%) urticaria and 8 (4.5%) psoriasis. Infection-related skin conditions had the second highest incidence of 18.7% (117), comprising 83 (70.9%) with fungal, 22 (18.8%) with bacterial and 12 (10.3%) with viral infections.

Disease Duration (Table 2)

The median disease duration was 12 months (range 0 – 600). As the data are highly skewed, the median is the most appropriate summary statistic. 42% had skin disease greater than a year with about 10% greater than 5 years. 6 patients provided no information for disease duration.

Disease Severity (Table 2)

This was classified as mild, moderate or severe. Most patients (51.2%, n=320) had mild disease. Only a small proportion (3.0%,

disease severity scores were not undertaken, the team were working closely together and we are comfortable this gives a pragmatic estimate of severity. Interestingly, as 42% had had their condition greater than a year, 30% reported sleep disturbance and 13% took time off work or school, the impact on the patients' wellbeing could be deemed significant. Formal Dermatology Life Quality Index was not performed but would be interesting to consider in a further study.

Managing skin disease in Cambodia is costly for the patients with 53% of patients spending an average of \$10 on their treatment each month. This corresponds to 9.5% of their disposable income.

One model of improving dermatological care in resource poor settings has been to train health workers in just a very few disorders¹⁰ with a one day training programme introducing the use of an algorithm that led to a promising increase in diagnostic accuracy and improvement in the prescription of the correct medication. However in our situation focusing on just the top 3-4 disorders would equip health care workers to address just 35% of the disease burden (if our cohort represents the true prevalence figures). We are also aware of a range of more complex dermatoses which will only be diagnosed and managed correctly as there are enough well trained dermatology specialists in Cambodia. It is anticipated that the Diploma of Dermatology at the University of Health Sciences will deliver the necessary experts for Cambodia.

Whilst it would be inaccurate to presume that our data represent the prevalence of skin diseases in the general population prevalence, they are still useful. The whole population were offered access to the programme to assess and treat the disease that bothered them. The number of individuals invited to attend i.e. populations approached are not available so we cannot estimate prevalence.

Even with these limitations, the data have provided useful information to help tailor the local training programme to be appropriate and relevant to the local health concerns. Treatment for skin disease was leading to a significant financial burden on the patients with an average spend of \$10, representing 9.5% of the disposable income they would spend on food each month.

It was reassuring to discover that suitable treatments for the management of the diagnosed skin disease were available in majority of the cases (97%). However, these are still unaffordable to many patients..

Conclusions

This represents the first published study exploring the impact of skin disease on patients in Cambodia. We have demonstrated a broad range of skin diagnoses present in our sample with evidence of more complex cases. This supports the requirement for a well trained dermatological specialist work force to lead the diagnosis and management of difficult dermatology in Cambodia. However scabies, eczema and acne were the commonest dermatoses with scabies being the most costly to the patient. We propose that in tandem with developing a specialist dermatological service through the continuation and expansion of the Dermatology Diploma programme, there is additionally a focus towards educating communities and basic healthcare workers about simple management of common skin diseases with locally available treatment. It is possible that such a programme could

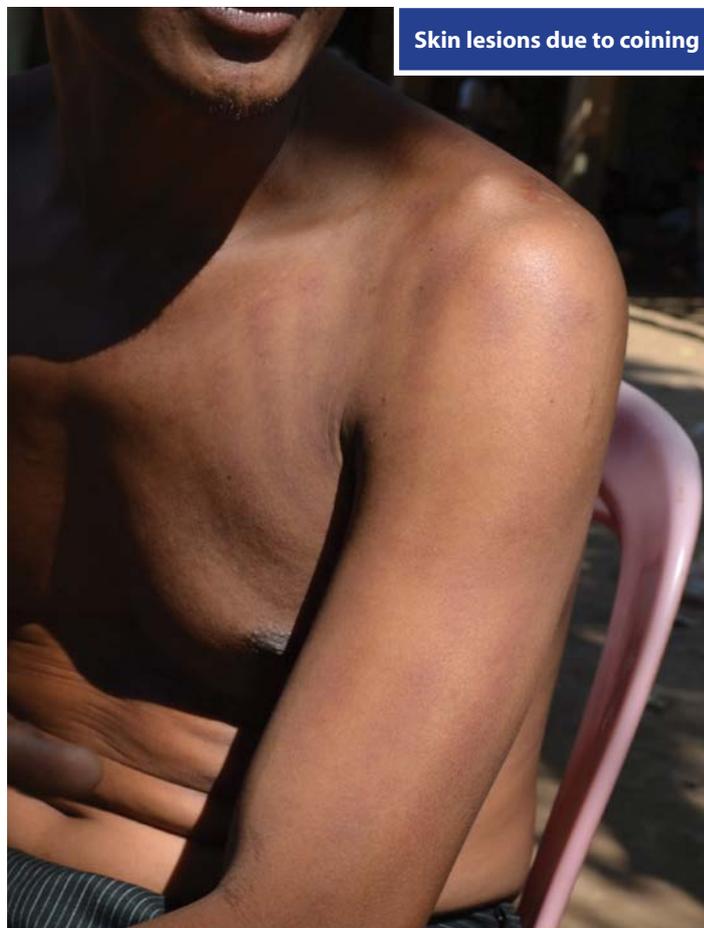
significantly reduce the impact of dermatoses for the patient and community alike.

Acknowledgements

We thank Drs. S.Has, S.Long, P.Prom, S.Vin and GD Akhurst for their input during the field work. We thank all participating Cambodian institutions, in particular the Ministries of Health and Education for their cooperation. Additionally we thank all the participating patients who helped us with the study and agreed to take part.

References

1. Mowla MR, Ara S, Mahmud NU *et al*. Spectrum of skin disorders in a tertiary care hospital in Chittagong, Bangladesh. *Community Derm J*. 2015 11:3-6.
2. Cochrane AL. Effectiveness and Efficiency. Random Reflections on Health Services. London: Nuffield Provincial Hospitals Trust, 1972
3. Hay RJ & Fuller LC. The assessment of dermatological needs in resource-poor regions. *Int J Dermatol*. 2011 50(5):552-7,
4. Bith, Pollie. AIDS in Cambodia. *Lancet Infect Dis*. 2004 4(8):482
5. Landwehr D, Keita S M, Ponnighaus J M, Tounkara C. Epidemiologic aspects of scabies in Mali, Malawi, and Cambodia. *Int J Dermatol*. 1998 37(8):588-90
6. Bendick C, Mey S. Haematomas and gingival bleeding. *Lancet*. 2012 379 (9834):2400
7. Figueroa J I, Fuller L C, Abraha A, Hay R J. Dermatology in south western Ethiopia: rationale for a community approach. *Int J Dermatol*. 1998 37(10):752-8
8. El-Khateeb EA. The spectrum of paediatric dermatoses in a university hospital in Cairo, Egypt. *J Eur Acad Dermatol Venereol*; 25: 666-72
9. Del Pozzo-Magana BR, Lazo-Langner A, Gutierrez-Castrellon P, Ruiz-Maldonado R. Common Dermatoses in Children Referred to a Specialized Pediatric Dermatology Service in Mexico: A Comparative Study between Two Decades. *ISRN Dermatol*; 2012: 351603.
10. Mahé A, Faye O, N'Diaye H *et al* Integration of basic dermatological care into primary health care services in Mali. *Bull World Health Organ* 2005 83 (12): 935-941





FOUNDING EDITOR

Dr Paul Buxton

EDITORS

Dr Chris Lovell
Dr Michele Murdoch

EDITORIAL BOARD

Professor Henning Grossman
Professor Steven Ersser
Dr Claire Fuller
Dr Sam Gibbs
Dr Richard Goodwin
Professor Rod Hay
Dr Kassahun Desalegn Bilcha (*Ethiopia*)
Professor Donald Lookingbill (*USA*)
Professor Aldo Morrone (*Italy*)
Professor Ben Naafs (*The Netherlands*)
Professor Gail Todd (*South Africa*)
Dr Shyam Verma (*India*)
Dr Rachael Morris-Jones
Ms Rebecca Penzer
Professor Terence Ryan
Professor Henry de Vries

EDITORIAL SECRETARY

Mr John Caulfield

DESIGN / DTP / PRINTING

Evonprint Ltd, Small Dole, West Sussex, BN5 9XR, UK
info@evonprint.co.uk ISSN 1743 - 9906
*Articles may be photocopied, reproduced
or translated provided these are not
used for commercial or personal profit.
Acknowledgements should be made to the
author(s) and to Community Dermatology Journal*



INTERNET SHOPPING

If you buy goods on the internet, you can raise funds for Community Dermatology Journal at no extra cost via the website



www.spendandraise.com/cdj



The British Dermatological Nursing Group (BDNG) have some useful resources available on their website that can be found at www.bdng.org.uk/resources/ and are open access for whoever wishes to use them.

Community Dermatology Journal



Comm Dermatol J 2015;11:13-28

If you have any interest in medical care, whether in well established medical centres or in a rural health centre then the Community Dermatology Journal is for you. It brings up to date, relevant information on the diagnosis and treatment of skin disease and is particularly for health workers in developing countries.

So please share your interest and experience by sending articles, reports and letters that are welcomed by the Editorial Board - see Guidelines for Authors below.

You will find it is also a useful resource for educating health workers and the populations they serve and for keeping in touch with dermatology services in developing countries.

It is published twice a year and over 7,000 copies of each issue are sent, free of charge, to nearly 200 countries. All issues can be viewed online, free of charge, on the IFD website www.ifd.org.

It has an honorary editorial board but is published, printed and distributed professionally, which is the main expense. The journal is supported by voluntary donations and contributions can be sent to the editorial office.

Those taking out a regular subscription by standing order of over £25 per year receive a copy of each issue. The appropriate form can be found on the website

Guidelines for Authors

All contributions are reviewed before publication. Original articles should not exceed 1,200 words; short reports/ letters should not exceed 500 words. Contributions should follow the detailed Guidelines which are on the website- www.ifd.org.

Please send communications by email to: editor.commderm@ifd.org

with a copy to:
christopher.lovell@nhs.net
michele.murdoch@nhs.net

or by post to:
Mrs Eve Arnold
Community Dermatology Journal
International Foundation for Dermatology
4 Fitzroy Square, London W1T 5HQ
United Kingdom

**We look forward to receiving
your articles, reports
and letters!**

SCHOLARSHIPS and AWARDS

The **Foundation for International Dermatologic Education** (www.fide-derm.org) awards travel grants and scholarships to enable dermatologists from Latin America, Asia and RDTG at Moshi, Tanzania to attend international meetings.

Imrich Sarkany Non-European Memorial Scholarship

The Imrich Sarkany non-European memorial Scholarship is awarded to young dermatologists outside Europe to attend a meeting of the European society for Dermatovenereology.

The **Society for Pediatric Dermatology** offers an annual award to attend its annual meeting. The successful candidate should be a doctor working in a resource-poor country, and who has made a major contribution to its paediatric dermatology service. More details from info@pediderm.net

The **Wellcome Trust** (www.wellcome.ac.uk) enables mid-career researchers from low and middle-income countries to establish an independent research programme in public health and tropical medicine. To be eligible, the candidate should be either a medical doctor with a higher qualification equivalent to membership of a medical college (eg MRCP) or possess a higher degree (eg PhD) in a relevant biomedical science.