

Tropical Dermatology
RJ Hay, Kings College London

In tropical countries over 50% of the population may have skin disease and skin problems are usually the first or second most common diagnoses made in primary care centres. This creates a huge work load, treatments given are frequently incorrect and associated with a high level of treatment failure. Solving this problem involves the development of pathways for management, training and the evaluation of diagnostic and therapeutic options, appropriate to the environment. Concentrating on dealing with the common and also identifying potentially life threatening or disabling conditions. In this presentation we will discuss the extent and impact of tropical dermatoses and then look at three in more detail to identify problems with management and control

Scabies is a common ectoparasitic infection which reaches epidemic levels in some populations in the tropics of over 40%. There is evidence that there is early transmission with high parasitic counts occurring in babies, thereby ensuring intrafamilial spread or through high level carriers. Conditions where there is severe overcrowding, eg prisons, refugee camps, schools, can also lead to high parasitic loads. However even in cases with low parasitic loads there is also growing evidence of frequent and more serious complications such as nephritis leading to chronic renal damage and rheumatic fever as well as septicaemia in infants in tropical climates. Group A streptococcal infection is associated scabies in these environments. Scabies mites can control immunological pathways in the skin including IL16 and TNF ligand expression and complement activation through *Sarcoptes* serpins. Treatment, while widely available, is fraught with difficulties such as compliance with topical anti-scabietics such as permethrin. Lack of privacy is a disincentive to correct application of medication. The cost of treatment is also an obstacle for poor families, although 3-5% sulphur preparations are cheap in most countries. Attempts to eliminate scabies at population or community level have been made. However some patients (disseminators) appear to have higher infected loads and their recognition is a key to successful control. The most widely adopted ways have been through the use of topical permethrin or ivermectin as an oral treatment. The published studies using ivermectin have mainly shown highly effective levels of response in communities although this has not been uniform. The formation of the International Alliance for the Control of Scabies (IACS) is a welcome development that promises to advance the control of this common infection through advocacy, the organisation of new clinical trials and research and the use of media and communication to focus health strategies on reduction of endemic scabies to manageable levels. The World Health Organisation has recently recognised scabies as a neglected tropical disease.

A second infection is tinea imbricata which is a dermatophytosis caused by the anthropophilic dermatophyte *Trichophyton concentricum*. It causes chronic infections in remote communities in an equatorial band encompassing the South Pacific, Asia, and Central and South America. The clinical presentation consists of concentric annular rings resembling erythema gyratum repens. Chronic infection is associated with elevated levels of IgE specific to tinea imbricata. Currently it is thought that this is most likely to reflect a TH2 switch occurring in the development of dermatophytosis. 63% of those skin tested had ITH to *T.concentricum* antigen, 37% had no reactions and 0% had DTH. Circulating dermatophyte antigen has been identified in infected serum employing an immunoradiometric assay. Patients also show defective expression of some cytokines. The implication of these findings is that although *T.concentricum* responds to antifungals such as oral terbinafine the

likelihood of elimination in communities without universal treatment is low given the poorly developed immunological resistance in the population

The third infection is a recognized neglected tropical disease onchocerciasis *Onchocerca volvulus*, a filarial worm which causes this disease affected 18m people In Africa, C. S. America, Southern Arabian peninsula (Yemen). The vectors are Black flies of the genus *Simulium* and these are associated with their breeding sites near fast rivers in tropical forest and savannah. The main clinical features are : Ocular - keratitis, uveitis, chorioretinitis and skin disease together with the appearance of encysted adult filarial worms in nodules nodules. The diagnosis is confirmed by Skin snips or biopsy to show migrating microfilariae, but ocular examination and serology is useful. Treatment: Ivermectin 150mg/kg, Diethylcarbamazine (DEC), (Suramin). The skin disease is classified by morphology in Normal appearing skin seen in c 40% of patients. Acute papular onchodermatitis APOD, Chronic papular onchodermatitis CPOD, Lichenified onchodermatitis LOD, Hypopigmentation and Atrophic onchodermatitis . The appearance of the skin is a very good guide to the development of T cell mediated immunity as the itchier variants such as lichenified and chronic papular onchodermatitis are associated with the highest levels of immunity. Those with normal skin show poorly developed immunity. In contrast to tinea imbricata a concerted public health control campaign using mass treatment with ivermectin has eliminated onchocerciasis in much of South and Central America and substantially reduced it in central regions of Africa