

Scabies: Looking at ways to deal with endemic scabies in Fiji

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In many developed countries such as Australia, scabies is usually episodic, and is mostly seen by general medical practitioners, but if either a local outbreak occurs, or the cause of itch is not diagnosed, it is often dermatologists who are asked to help solve the problem [1]. In a situation of endemic scabies such as that which occurs in resource poor countries such as Fiji and in some indigenous communities including in Australia, the problem of scabies is often seen initially by the primary health care providers, commonly in a public clinic setting [2-4]. If the problem is recognized as being widespread, it is often passed to the public health authorities to deal with. At this level it is recognized that the problem of endemic scabies is no longer a purely skin / dermatological problem any more, but a public health problem.

Consideration has to be given to the effectiveness of treatment of the infected person, their immediate family and close contacts, as occurs in a situation where scabies is sporadic and where overcrowding, poverty as well as community caring for children occurs. Easily accessible water supply, poor sanitation, and a lack of funds to purchase the anti-scabietics for the often large and extended family are problems, and solving the problem is often seen to be "too hard to do".

The low level of research into reducing the scabies infection rate is probably partly due to the fact that those countries which have endemic scabies are also often the countries where there are a large number of other health issues to deal with including high maternal mortality, high infant mortality, HIV infection and tuberculosis.

Therefore it seems a rational decision that solving the scabies problem is often not viewed as a priority issue, as far as lives saved per dollar spent is concerned. It is often difficult for the public health departments and the governments of these countries to justify spending money on what is often seen as merely an itchy skin problem when other health issues are associated with increased mortality. But is scabies as harmless as those of us who deal with sporadic scabies believe?

Scabies infestation can result in *Staphylococcus aureus* and Group A streptococcal infections, which enter the skin through the breaks in the epidermal barrier usually as a result of scratching. These infections may lead to abscesses, cellulitis, post-streptococcal glomerulonephritis, and many believe that the response to Group A streptococci can cause rheumatic fever, although this has not been definitively confirmed [4-7].

Does this mean that as dermatologists, we should also put the problem into the too hard to solve

basket, or should we at least establish whether some of the strategies we have implemented in local epidemics, such as in nursing homes, hospitals and prisons could be expanded to involve large communities or even countries?

The burden of scabies in developing countries around the world is high. The World Health Organization estimates that over 300 million people worldwide are affected by scabies each year and countries of the Pacific region, including Fiji, and the Solomon Islands and Papua New Guinea, are recognised as having a particularly high burden of scabies and its complications [8].

During a 2003 dermatology teaching visit from Australia to Fiji, the Fijian nurses and doctors expressed their concern that they believed scabies was their biggest health problem, and they estimated its management was taking up 40% of their time. Following this a discussion with members of the Ministry of Health in Fiji was held, and a request made to assist with the resolving the problem of scabies in Fiji was put to the Head of Dermatology at St Vincent's Hospital in Sydney, and a working collaboration developed.

Fiji, located about 4,700 km North East of Australia's Eastern coast, is one of Australia's Pacific neighbours. It has a population of 837,000 people distributed across more than 300 islands where five star hotels and resorts clash with a developing country background, where the national per capita income is US \$3,300 and many villages still have communal water supply, water sealed latrines for multiple use, and subsistence living [9, 10].

Five doctors with an interest in scabies then became partners when Austrian, Karin Haar met Australian, Margot Whitfeld and Fijians, Meciusela Tuicakau, Kamal Kishore, Filimone Raikanikoda and Josefa Koroivueta to work out the best way to establish if there really was a problem to solve and, if so, how to do it.

Preliminary data were obtained from the national dermatology clinic, based in PJ Twomey Hospital. This showed that 38% of patients seen in the clinic had scabies or infected scabies, with children, in particular, being affected [11]. However, no data on community based mass treatments were available at that time. Consequently, Dr Whitfeld and Dr Haar, together with the Fiji Ministry of Health, developed a study plan to assess the size of the problem and to look at whether mass treatment for scabies was a viable option.

A study was designed firstly to determine the prevalence of scabies in two rural Fijian villages, and then to compare treatment regimens containing either benzyl benzoate or ivermectin / permethrin to treat all the people registered as living in the villages, as has been done when treating educational communities, prisons or nursing homes using current guidelines for the use of ivermectin [1, 12].

The results showed prevalence rates of 24% and 38% in two communities of approximately 600 members. The two treatment regimens were equally effective at three weeks but ivermectin was better tolerated than benzyl benzoate in those with additional skin problems, in whom there was an exacerbation of symptoms [11].

It became apparent that national prevalence data were required to assess whether the data from two villages were representative of the country as a whole.

It was therefore decided, in conjunction with the Fijian Ministry of Health and new members of the team, Ms Lucia Romani, and Andrew Steer, to carry out a cross-sectional survey of more than 13,000 people across Fiji to assess the prevalence of scabies and better document the size

of scabies as a health problem. A total of 96 villages, settlements and schools were surveyed across both the Indo-Fijian and indigenous Fijian populations and all age groups.

The results of the study showed that the prevalence of scabies was 23% of the population sampled, with 55% of the children aged 4-7 being affected, and 33% of the 0-3 year olds. Secondary infection was found in all age groups, but was maximal in those with more extensive scabies [2].

The literature shows that in isolated communities with this level of prevalence of scabies, increasing water availability and treating individuals is not sufficient on their own to improve the overall health status of the population. It is necessary to treat both symptomatic and asymptomatic scabies infections [13-16].

In Fijian communities, treating family members and contacts may extend to management of 10 or 20 people. We are currently developing a proposal with an Australian / Fijian partnership looking at whether it is possible to treat isolated communities with endemic scabies with a mass drug administration protocol and to determine whether treating a whole community can have a long lasting effect.

The results of this study could contribute to our knowledge of alternative ways of treating endemic scabies.

The next step is to find the best way of implementing this in a multi-cultural community up to even national level. It is our responsibility to find the most efficient, well tolerated and safest way to achieve this in a way that is sustainable, whether this involves ivermectin, permethrin cream, benzyl benzoate, sulphur or a combination of treatments.

Treating scabies not only alleviates extreme itch, but also reduces its more serious complications.



Peripheral Clinic in Fiji



The Scabies Interest Group in Fiji 1

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