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An investigation of cercarial dermatitis causing *Schistosome cercariae* in snail intermediate hosts in the Anavilundawa Sanctuary of Sri Lanka

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Cercarial dermatitis is an allergic disease condition of humans caused by the penetration of skin by non-human *Schistosome cercariae* released by snail intermediate hosts present in fresh water bodies. People (n=38) in Anavilundawa area, Chilaw who had constant contact with fresh water bodies were found to have cercarial dermatitis when studied by a questionnaire survey as carried out in this study. The presence of itching and red colour micro papules were considered as the predominant symptoms for this allergic disease condition in humans.

This study investigated the cercariae types released by snail intermediate hosts in fresh water reservoirs of Anavilundawa sanctuary area in the dry zone of Sri Lanka. A total of 329 snails (of the genera of *Lymnae, Indorplanobis, Pila* and *Paludomus)* were collected and they were allowed to release cercariae in to water and cercraiae types were identified by morphology and PCR (to amplify ITS2 genetic locus of ribosomal DNA) followed by sequence analysis. The results indicated two out of four genera of fresh water snails *Lymnae, Indorplanobis* were infected with *Furcocercous cercariae.* The results showed eight cercariae types which were morphologically different. All these cercariae were of the type *Furcocercus cercariae* which are known to cause cercraial dermatitis allergic condition in humans. Thus the presence of *Furcocercous cercariae* types in the water bodies in Anavilundawa may likely to be responsible for the cercarial dermatitis condition found to prevail in the tested human population. The sequence and genetic analysis done on five cercariae types showed that they are of three distinctly different genetic groups(clades) even though two cercariae types (species belonging to the schistosomatidae) were found to be aligned in their sequences tested, as detected by a blast search. Schistosomes belonging to genera of *Diplostomum, Clinostomum* and *Shistosoma* were found through this phylogenetic study. This preliminary study shows that there is a limited genetic diversity among the non-human cercariae types collected from snail intermediate hosts of Anavilundawa sanctuary area. This genetic diversity may be helpful for the cercariae to find their specific snail intermediate hosts. The impact of the presence of these cercariae types in fresh water bodies in other dry zone areas and the risk for humans in getting cercarial dermatitis have to be further investigated. Studies to investigate about the final hosts of these cercariae would be helpful in order to minimize the cercarial dermatitis in humans.

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