Long-term Changes in Severity of Arsenical Skin Lesions Following Intervention to Reduce Arsenic Exposure

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Little is known of the long-term changes in arsenical skin lesions. We investigated the changes in severity of skin lesions over a period of 10 years among an affected cohort in an area where shallow wells, previously the main source of drinking water, had been contaminated with arsenic as a result of tin-mining activities in Southern Thailand. During the 10-year period, interventions to reduce the use of shallow-well water had been implemented. The roles of the type of drinking water during the 10-year period and other factors in regression of skin lesions were also explored. Over the 10-year period, both regression and progression of lesions occurred, though the majority of the subjects followed up remained in the same stage. Drinking predominantly piped or bottled water increased the probability of regression in subjects with mild-stage lesions but not in those with more advanced-stage lesions. By contrast, a high arsenic content in the household well water, even though it was not used for drinking, decreased the probability of lesion regression among the subjects in more advanced stage but not among the milder-stage cases. Irrespective of the initial stage, a period of absence from the affected area increased the likelihood of lesion regression. The different patterns of factors associated with lesion regression in mild- and more-advanced-stage subjects suggest that pathways of continued contamination may have been operating other than that via drinking water.