

Arsenic in Drinking Water and Urinary Level of Arsenic

Sk. Akhtar Ahmad*, A.K.M. Muyeen-us Safa¹, M.H. Salim Ullah Sayed,
Manzurul Haque Khan, M.H. Faruquee², M.A. Jalil,
M. Shah Alam Bhuiyan, M.A. Khalique Barbhuiya and M. Elias

National Institute of Preventive and Social Medicine (NIPSOM), Dhaka, Bangladesh

¹Bangladesh Medical College, Dhaka, Bangladesh

²Asia Arsenic Network, Dhaka, Bangladesh

*E-mail: anon@bdcom.com

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This study was carried out in two arsenic-affected villages of Bangladesh to explore the relationship between total arsenic in urine and the severity of disease manifestations. A total of 60 subjects consisting of 30 cases and 30 controls were included in the study. The mean ages of cases and controls were 32.97 (\pm 7.65) and 32.7 (\pm 7.6) years, respectively. The arsenic content of the tubewell water consumed by the cases and the controls ranged from 100 to 1000 ppb and from 0 to 40 ppb, respectively. The total arsenic content in the urine of the cases and the controls ranged from 62–332 ppb and from 0–55 ppb, respectively. The difference in mean urinary levels of total arsenic between the cases (163.8 ppb) and the controls (10.7 ppb) was statistically significant ($p < 0.001$). Cases with grade-2 lesions (15) were consuming water containing higher levels of arsenic (526.7 ppb) compared to cases with grade-1 lesions (403.3 ppb), but the difference was not statistically significant. Statistically significant differences (< 0.001) in duration of tubewell water use, age of skin lesion and total arsenic in urine between cases with grade-1 and grade-2 manifestations were observed. Positive correlations ($p < 0.001$) were observed between arsenic load (estimated) and total arsenic in urine, age of the skin lesion and severity of disease manifestation.