

# Water is life but Arsenic there is the silent killer

*Shakeel Ahmed Ibne Mahmood*

According to WHO 13 lakh children of under-five age group, mostly in developing countries, die annually for causes related to unsafe drinking water, poor sanitation and hygiene. The report says that "Arsenic problem" will have major economic impacts throughout Bangladesh, affecting agriculture and other related industries, water management, public health and the overall national economy.

Bangladeshis first turned to tubewells for drinking water to avoid waterborne diseases affecting surface water. In the 1970s, a nationwide campaign of switching to groundwater as a source of drinking water was launched following evidence that gastrointestinal diseases and infant mortality were mostly attributed to drinking bacteria-contaminated water from ponds and open wells. In 1983, the first arsenicosis patient was diagnosed in West Bengal. In 1987, the first arsenic patient from Bangladesh was identified. In 1993, The Department of Public Health Engineering confirmed arsenic in tube well in Chapainawabganj in Rajshahi Division.

The Arsenic issue was internationally recognized in 1995, when the first international conference on the subject was organized. Now, however, according to health officials, 45 percent of Bangladesh's 21 million tube wells are feared to be pumping arsenic contaminated water threatening the health of our people. More than 14,000 people have been identified in the country as suffering from arsenic-related diseases. Thousands more will join them in the years ahead if urgent steps are not taken. An estimated 28-35 million are exposed to drinking water in which concentrations of arsenic exceed the Bangladeshi drinking water standard (0.05 mg/L).

Symptoms: Arsenic has been classified as a known (Class A) human carcinogen; at high levels it can damage nerves, the stomach, intestines and skin. The clinical manifestations due to chronic arsenic toxicity develop very insidiously after six months to two years or more depending on the amount of arsenic intake. The most common early signs of chronic arsenic poisoning are muscle weakness and aching, skin pigmentation, garlic odor in breath and perspiration, excessive salivation and sweating, stomatitis, generalized itching, sore throat, coryza, lacrimation and conjunctivities. Most cases of arsenic poisoning remain undetected in the early stages because of social stigma and misconceptions; most people perceive this as a contagious disease. However, patients with chronic arsenicosis in Bangladesh often complain of gastrointestinal symptoms such as anorexia, nausea, vomiting, excessive salivation, pain in abdomen, constipation or sometimes diarrhea and weight loss. It has been found that arsenic toxicity is more pronounced among poor and malnourished groups of people. The arsenic contamination is not only causing serious health hazard to the people, but also affecting the environment creating social problems and overburdening our limping economy because it is creating a vicious cycle of malnutrition.

People at risk: Almost 57 million people in Bangladesh, around 50 per cent of the country's population, are at risk because of well water that has been contaminated with arsenic, a UN report warned recently. Compiled by the UN University in Tokyo with the Dhaka-based Earth Identity Project environmental group, it said the number of people at risk exceeds the number of people worldwide infected with HIV. And since it takes a person

several years of drinking arsenic-contaminated water to develop visible symptoms, "a much larger than anticipated number of people may be impacted".

People with arsenic-poisoning began surfacing sometimes in the eighties yet we are still to come to terms with it. The government knew as early as 1985 when Bangladeshis started going to India for skin complaints which was being diagnosed as arsenic poisoning. Today more than 90 per cent of the population of Bangladesh are drinking ground water on a daily basis. It is therefore only a matter of time before more and more people turn up with arsenical skin lesions in the late stages.

Arsenic and other heavy metals used both in agriculture and in industry, can cause cancer, damage to the liver, kidney and intestines, blood pressure, sterility, malnutrition and genetic abnormalities in humans. Although thousands of people have already been diagnosed with poisoning symptoms, much of the 'at-risk' population particularly among children and adolescents has not yet been assessed for arsenic related health problems. The developmental effects resulting from the ingestion of arsenic in drinking water have not been extensively investigated yet. However, one study done in three villages in northern Argentina with high level of arsenic in drinking water, indicated that children are more sensitive to arsenic induced toxicity than adults.

It is not only the ill effects of arsenic contaminated drinking water, but at the same time it is because of irrigation of grain fields with arsenic-contaminated water. Arsenic was found above permissible limits in vegetables, fruits and cereal crops grown in soils irrigated with contaminated water. And because of the arsenic, the quality of food (nutritive value) also decreases.

Suggested steps: The WHO paper strongly warns against the danger of 'denial' and complacency. It recommends actions almost on a war footing. We do not want to die so disastrously. An appropriate measure must be taken as soon as possible. Factors, such as ignorance, illiteracy, superstition, poverty, joblessness, malnutrition, low-income etc. have been shown to be responsible for this disastrous problem. Public awareness is urgently required to overcome this catastrophic health uncertainty. As a preventive measure, surface water/rain water can be used for all domestic purposes including drinking. Educational programme should be carried out. Government and NGOs can support UNEP in designing an international treaty that will phase out these dangerous chemicals called POPS (persistent organic pollutants), which are used both in agriculture and in industry, as quickly as possible. Improvement in the nutritional status of the population; and better facilities to diagnose and treat arsenicosis will be much helpful in containing the scourge. Using media materials (such as videos, pamphlets, booklets, radio and television including print, and electronic media, film and the arts, and other media technologies) people can be motivated for safety.

"Bangladesh Government would focus on reaching a consensus on the technical issues that offer the best possible ways of combating arsenic problem. Arsenic experts from across the globe will come up with concrete multi-sector findings to enable the government and other players to effectively tackle the problem. Our collective efforts must be based on clear thinking and built around practical steps that can lead us to concrete solutions for the future".

Arsenic is not only causing serious health problem but also imposing huge social cost. The cost of living is being seriously increased by this hazard while the medical management facilities are not adequate. Such a problem needs immediate attention from the policy makers as the survival of citizens depend on the solution of the problem.

Epilogue: There is a saying in Bangla "water is life" which we cannot say any more with confidence when arsenic contaminated water is taking our lives... But it is water (arsenic-free) again which only can sustain us.

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Tue. July 23, 2002