

Applied research on arsenic in Bangladesh

Arsenic Cell

Directorate General of Health Services

Ministry of Health and Family Welfare

Government of Bangladesh

Mohakhali, Dhaka

Environmental Health Unit

World Health Organization

Dhaka, Bangladesh

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Edited by

Mir Misbahuddin

Division of Arsenic Research
Department of Pharmacology
Bangabandhu Sheikh Mujib Medical University
Shahbag, Dhaka

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Preface

The scope of this book within just eleven chapters is broad, ranging from research on arsenic levels in foodstuffs to clinical trials of different drugs for the treatment of arsenicosis. These research activities supported by the United Nations Foundation and WHO, have highlighted out the need for extended research on this neglected disease. Currently the majority of the World's patients suffering chronic arsenic poisoning are to be found here in Bangladesh, and regrettably there is still no satisfactory treatment. Although millions of dollars have been spent on mitigation programmes, only limited funding has been allocated to addressing arsenicosis health issues. The World Health Organization has taken much initiative in this regard which has been well received and appreciated by the Bangladesh health sector.

I invite readers to provide their valuable comments and opinions on the research studies presented here. These will no doubt further contribute to the further applied research on arsenic and health in Bangladesh.

I acknowledge the efforts of Dr. Salamat Khandker and Dr. Md. Siddiqur Rahman for compilation of this report. In addition I am grateful for the technical inputs provided by Dr. Andrew F. Trevett, Dr. Deoraj Caussy and Mr. Han A. Heijnen of WHO. Finally, I thank the individual researchers and their field level support staff for their dedicated work which has advanced our knowledge and understanding of arsenicosis

Mir Misbahuddin

Division of Arsenic Research
Department of Pharmacology
Bangabandhu Sheikh Mujib Medical University
Shahbag, Dhaka

Foreword

The Directorate General of Health Services and the WHO Environmental Health Unit have jointly prepared this compilation of 'Applied Research on Arsenic in Bangladesh'. It brings together the findings of eleven different studies, conducted with support from the United Nations Foundation (UNF) and the WHO Inter-Country Programme. National and international experts provided scientific inputs to design and implement the research, and WHO supervised and monitored the implementation of individual studies. The findings are primarily geared towards the needs of Bangladesh in relation to arsenic patient management. However, the research findings will be of particular interest to other countries in the region that are facing the challenge of arsenic-contaminated drinking water, as well as to the broader scientific community.

The studies examining the impact of arsenic exposure on nutritional status, and on mental development of children in Bangladesh are among the first of their kind. They have provided researchers with information on the factors contributing to the high prevalence of undernourished children in the arsenic-exposed population, as well as new data on the association between arsenic exposure and childhood development status.

Health care delivery for arsenicosis patients is an area where there remains much to do. Although the provision of arsenic-safe water is the most effective means of reducing risk, the use of anti-oxidants, selenium and spirulina would appear to significantly reduce risk and increase arsenic removal from the body. Symptomatic treatment with urea salicylic acid in white Vaseline ointment and cryosurgery are also important to help reduce the suffering of patients.

Based on recent research findings this document explores the important issues of healthcare delivery, risk assessment and management of arsenicosis patients. The risk assessment has contributed to our understanding of health problems arising from the intake of arsenic-contaminated foodstuffs; and study findings on patient management indicate a promising new paradigm for treatment. Nevertheless, these findings need further evaluation with a larger sample size in order to have greater confidence in the treatment regime. It is hoped that this report will be of value for health planners in determining how to best respond to the arsenic problem. Additionally, the scientific community will benefit from the progress made by the studies

included in this compilation by incorporating the knowledge into new research on risk assessments of arsenic exposure and in addressing treatment issues for arsenicosis patients.

Dr. Md. Shahjahan Biswas
Director General
Directorate General of Health Services

Dr. Andrew F. Trevett
Environmental Health Advisor
WHO Bangladesh