SCIENTIFIC ABSTRATCS

Epidemiological Profile of Methanol Poisoning in Bangladesh (2008-2014) and Clinical Experience of a Single Outbreak

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Background: World Health Organization (WHO) reported continuous increase of alcohol consumption in Southeast Asian region. On social and religious ground, open alcohol consumption is banned in Bangladesh though incidence of acute methanol intoxication is seriously increasing. Unfortunately, apart from WHO report (2004) there is no available epidemiological and clinical data in Bangladesh. This study was designed to gather the epidemiological information of methanol intoxication in Bangladesh since 2008. The in-depth clinical analysis of a single outbreak was also done.

Methods: Data were collected from the national archive center of Bangladesh. Two most circulated Bengali and one English daily newspapers were searched manually from March, 2008 to March, 2014 for the news of any incident of methanol intoxication happened throughout the country. Google scholar and PubMed search engines were also explored using the word 'methanol intoxication' as the search word. All data were cross-checked with the archive of a popular electronic channel. Clinical analysis of an incident was done using the patients' files from the hospital archive of Sylhet M.A.G. Osmani medical college in august, 2010. Data were expressed as table and charts. Student t test and chi-square test was performed to rule out statistical significance.

Results: Seventeen incidents happened within the study period, where total victim was 104. Out of them 79 died and only 25 survived with a death rate of 75.9%. Mean age of the victims was 40.2 years (range 3- 65 years). The majority of incidents (12, 70.5%) occurred in north-western belt of the country followed by 3 incidents (17.6%) in southern and 2 incidents (11.7%) in north-eastern part of the country. 70.5% of the incidents happened in the later part of the year (September-December). A massive methanol poisoning incident happened at north-eastern part of Bangladesh on 20th August, 2010. Total number of victims was 23 with an age range of 3 to 60 years (mean: 38.7 years). Among them, four victims died at home and four was brought dead to the emergency room. Fifteen patients were admitted to hospital and of them two died giving a total death rate of 43.4%. Major clinical findings were gastrointestinal manifestations (abdominal pain, vomiting/ nausea) in 15 patients (100%), followed by CNS effects including dizziness and vertigo in 7 patients (46.6%), visual disturbances (blurred vision, dilated pupil and hyperemia of optic disc) in 3 patients (20%), metabolic acidosis in 3 patients (20%), respiratory distress in 3 patients (20%) and renal involvement (oliguria) in 1 patient (6.6%). In addition to symptomatic management, intravenous sodium bicarbonate (for acidosis) and intravenous folinic acid (for ocular manifestations) were given with favorable outcomes. Two patients required hemodialysis for acidosis and renal involvement, while one of them ultimately died. On short term follow up (after 6 weeks) no patient had any residual complications.

Conclusion: Strong legislative initiatives are required to control the sale and consumption of methanol in Bangladesh. Considering its high death rate, medical personnel requires more training for prompt management of the cases. Development of public awareness especially among the rural community is a must to face the catastrophe.

Keywords: Disease Outbreaks; Epidemiology; Methanol; Poisoning; Bangladesh