EDITORIAL

CONTEMPORARY ISSUES OF POISONING: WHAT WE CAN LEARN FOR BANGLADESH

Received: 3 August 2015 *Accepted: 3 November 2015*

The burden of poisoning in Bangladesh is not exactly known but the information from the Health Bulleting 2014 mentioned poisoning within 10 causes for hospital admission and is one of the leading causes of death along with injury[1]. Most of the cases of poisoning are managed in the public health care system in Bangladesh. Cases of acute poisoning despite a medical emergency are admitted in general wards of medicine and paediatrics units of medical colleges and district hospitals or in upazilla health complexes. Considering poisoning as an important but relatively less well addressed field,a'training manual for management of poisoning' was prepared in 2007.Updated twice since then by the Directorate General of Health Services, Government of the People's Republic of Bangladesh for the improved management, is a laudable job done[2]. There is still a large gap in practice at the filed level.To cite couple of examples, large bore orogastric tube for stomach wash is still widely practiced though hardly there is any indication of using it; titration dose of atropine for initial atropinizationis not uniformly used for managing organphosphorus compound poisoning, though there are evidences supporting it[3,4].

Recent literature on poisoning provides a changing trend of the poisons used amongst the victims. For example, aluminum phosphide and paraquat are emerging to be new deadly poisons, drug facilitated crime against the commuters is increasing, various types of pharmacological drugs are becoming a substantial problem in cases of Deliberate Self Harm,clusters of cases of 'methanol poisoning' are being reported. These are all happening in the background of huge case loads of major poisoning by various insecticides, organophosphates predominantly[5,6,7,8]. Appropriate tackling of poisoning, an acute medical emergency,requires substantial human and logistic resources particularly to mention about trained team of health care professionals, diagnostic facilities for identification of the specific agent (analytical toxicology) and to detect the effects of poison and quick availability of organ support system. Some of the deadly poisoning incidents that happened in recent years caused enormous pressure on the health system for specific diagnosis and management by warranting a number of investigations and organ support that were not readily available. Some examples of such episodes of poisoning are: barium carbonate poisoning of the regimental population treated at Chittagong Medical College Hospital, plant poisoning by Xanthium strumarium tackled at Sylhet MAG Osmani Medical College Hospital, puffer fish poisoning tackled at Dhaka and Rajshahi Medical College Hospital and other different medical college hospitals, Black krait bite in Chittagong Medical College Hospital, and Russell's viper bite from Rajshahi Medical College Hospital (newly emerged-remerged snake envenomation unheard before)[9,10.11,12]. Every now and thenpoisoning with new substanceshappens that require substantial information for management which is not readily available to the treating team, for example, acute kidney injury following ingestion of 'Averrhoabilimbi', paraphenylenediamine containing hair dye poisoning causing multiorgan involvemnt[13,14]. Some of the cases of poisoning require urgent investigations like measurement and monitoring of electrolytes, arterial gas analysis, renal function, liver function, cardiac, respiratory, and CNS monitoring and support besides providing appropriate antidotes or antivenom.Analysis of the offending toxic agent is crucially important.Comprehensive facility for toxicological analysis of the clinical samples is not available anywhere in the country.

A number of events addressed the topic of poisoning in the last quarter of 2015: The 18th World Congress of the International Society of Toxinology (25-30 September 2015, Oxford, UK), 14th International Scientific Conference of Asia Pacific Association of Medical Toxicology, APAMT (Perth, Australia 1-4 December 2015),Toxicological Society of India Congress2015, 21-22 November 2015 (Kochi, India), 4thNatioanl Conference on Tropical Medicine and Toxicolgy Ban Trop Tox 2015 (17-18 December, 2015 Coxsbazar, Bangladesh).

Different initiatives have been taken by different countries to make improvement of the situation of

management of poisoning, for example dedicated toxicology unit with critical care support or providing poisoning information services. In resource limited settings like ours, keeping all the patients of poisoning in a dedicated space with comprehensive trained human resources and available diagnostic, therapeutic and supportive services may improve the situation and also will be useful for providing training andconducting research needed for the country. 'Snakebite clinic' is such an initiative taken by Chittagong Medical College Hospital for managing snakebite cases. It has been found to effectively manage the cases of snakebite round the clock (24/7) with substantial reduction of death following deadly neurotoxic snakebite to a negligible number. This clinic has become an excellent training centre for human resource development and a hub for scientific researches and publications.

To start with such a dedicated 'poisoning management unit' in major treating hospitals may be piloted before wider implimentation across the country. A common protocol used in such a unit can be replicated across the country for producing trained human resources and locally relevant information on poisoning.

Robed Amin[1], Aniruddha Ghose[2], Abdullah Abu Sayeed[3], Md. Ridwanur Rahman[4], MA Faiz[5]

[1]Associate Professor of Medicine, Dhaka Medical College, Dhaka, [2]Associate Professor of Medicine,Chittagong Medical College, Chittagong, [3]Junior Consultant, Rangunia Upazilla Health Complex, Rangunia, Chittagong,[4]Professor of Medicine, Shaheed Suhrawardy Medical College, Dhaka,[5] Professor of Medicine (Retd.), Dev Care Foundation, House# 83, Road# 12/A, Dhanmondi R/A, Dhaka-1209, Bangladesh.

References:

1. Health Bulletin 2014. DGHS.
2. Faiz M A, Ahmed S, Amin M R, Ghose A, Hoque M M. (edited) Training Manual on Management of Poisoning, Guideline-2007.
3. Abedin M J, Sayeed A A, Basher A, Maude R J, Hoque G &Faiz M A (2012). Open-Label Randomized Clinical Trial of Atropine Bolus Injection Versus Incremental Boluses Plus Infusion for Organophosphate Poisoning in Bangladesh. *J. Med. Toxicol.* 8(2):108-17.
4. Ahmed A S, Basher A, Amin M R, Faiz M A (2014). Effect of Intensive Atropine Doses (Rapid Incremental Loading and Titration) for Management of Organophosphorus Pesticide Poisoning: a Case Series. *APJMT* 3;123-26.
5. Majumder M I, Hoque M M, Ahmed B.U.M W, Rahman A.H.M W, Noor-e-alam S M, Faiz M A (2010). Fatal Deliberate Self Harm with Paraquat. *J Medicine; 11: 176-179.*
6. Majumder MMA, Basher A, Faiz MA, Kuch U, Pogoda W, Kauert GF, Toennes SW (2008). Criminal poisoning of commuters in Bangladesh: Prospective and retrospective study, *Forensic Science International; 180(1): 10-16.*
7. Saha JK, Kak A, Hossain MZ, Amin MR, Ahmed M, Ahsan HMN, Rahman S (2014). Aluminium phosphide poisoning cases in a tertiary care hospital. *J Dhaka Med Coll. 23(1): 3-6.*
8. Amin M R, Chowdhury F R, Basher A, Faiz M A. Methanol poisoning in Bangladesh, a deadly case series. *Korean Journal of Internal Mediicne* Vol 29, No 5 (suppl 1):203
9. Ghose A, Sayeed AA, Hossain A, Rahman R, Faiz A and Haque G (2009). Case Report: Mass barium carbonate poisoning with fatal outcome, lessons learned a case series. *Cases Journal, 2: (9327); 1 – 4.*
10. Islam Q.T, Razzak M.A., Islam M.A., Bari M.I., Basher A., Chowdhury F R, Sayeduzzaman A.B.M., Ahasan H.A.M.N., Faiz M A et al (2011). Puffer fish poisoning in Bangladesh: clinical and toxicological results from large outbreaks in 2008. *Transactions of the Royal Society of Tropical Medicine and Hygiene; 105: 74–80.*
11. Faiz M A, Ghose A, Ahsan M F, Rahman M R, Amin M R, Hassan M M U, Chowdhury M A W, Kuch U, Rocha T, Harris J B, Theakston R D G and Warrell D A (2010). The greater black krait (Bungarus niger), a newly recognized cause of neuro-myotoxicsnake bite envenoming in Bangladesh. *Brain; 133: 3181 – 3193.*
12. Gurley E S, Rahman M, Hossain M J, Nahar N, Faiz M A et al. (2010). Fatal Outbreak from Consuming Xanthium strumarium Seedlings during Time of Food Scarcity in Northeastern Bangladesh. *PLoS ONE; 5 (3): e9756: 1-7.*
13. Gupta R D, Mahmood S, Adhikary G (2015). Acute kidney injury following ingestion of 'Averrhoabilimbi' fruit juice: A systematic review of cases. 4th National conference on Tropical Medicine & Toxicology, *BanTropTox, 17-18 Dec 2015, Coxsbazar, Bangladesh.*
14. Khan N A, Karim R, Islam R M, Amin M R (2015). Hair dye can lead to a dyeing condition-Paraphenylenediaminepoisining in DMCH. 4th National conference on Tropical Medicine & Toxicology, *BanTropTox, 17-18 Dec 2015, Coxsbazar, Bangladesh.*