



Criminal Poisoning of Commuters in Bangladesh

Faiz MA (1), Arif SM (1), Majumdar MA(1), Basher A (1),
KuchU(2),KauertGF(2),PogodaW(2),TönnnesSW (2)

*Presented by
Medicine Unit –Green
Dhaka Medical College*

- 1.Dhaka Medical College Hospital, Dhaka, Bangladesh.
2. Institute of Forensic Toxicology, Centre for Legal Medicine,
Klinikum der Johann Wolfgang Goethe-Universität, Frankfurt am
Main, Germany.



Back ground:

- Every day patients with CNS depression of unclear etiology are admitted to Dhaka Medical College and Hospital (DMCH).
- Usually these patients are found unconscious on buses or other public places, and are brought to hospital by police or some kind people.
- This emergency health problem was not adequately addressed in Bangladesh before though it is happening from many years (khan et al 1983).



Background:

- The unaware peoples are attracted with their offerings and easily trapped by taking the offending agent becomes gradually drowsy and unconscious.
- There was a change in the trends of pattern of poisoning over the recent decades.
- Few years' back it was observed to be induced done with dhutura and allied compounds, now different benzodiazepines are used with different food items for this purpose (Jain A *et al* 2000).



Objective:

- High numbers of patients with CNS depression from public transportation challenge hospitals in Bangladesh. In the absence of specific diagnoses, care of the patients has been limited.
- To determine the cause of this condition and whether its circumstances (travelling, loss of belongings) are associated with criminal assault, or incidental to food adulteration.

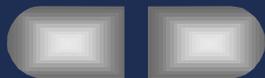


Methodology:

- **Design:** Analysis of urine samples from patients; liquid chromatography coupled to time-of-flight mass spectrometry (LC-TOF MS); fluorescence polarization immunoassay.
- **Setting:** A medicine unit of a public tertiary care teaching institution in Bangladesh's capital Dhaka. About 7.6% of admissions of this unit (46.6% of all poisoning) had been attributed to travel-related poisoning in 2005.
- **Patients:** Convenience sample of 15 patients selected from those admitted with CNS depression in the absence of other abnormalities, during three consecutive days in May 2006.

Results:

- The 25–60-yr-old patients (14 males, 1 female) had diverse occupations ranging from day labourer, farmer and taxi driver to businessman, manager, and individuals working or residing abroad.
- Most incidents were associated with bus travel (N=8), followed by train journeys (N=2), the airport area after air travel (N=1), and a taxi ride during which the driver was poisoned. Two other patients were presumably poisoned in local markets.



Results:

- Twelve patients remembered eating or drinking before they lost memory or fell asleep.
- The direct financial damage suffered by the patients was as diverse as their background. It ranged from no property loss to all goods carried, with the highest values equalling US-\$ 300 in cash and a taxi cab. Mobile phones, wallets and watches were frequently missing.
- Apart from the CNS depression, there were no other remarkable clinical or laboratory findings.



Results:

- By LC-TOF MS, lorazepam was detected in all samples. Five samples also contained diazepam or metabolites; nitrazepam was present in three.
- Immunochemical results were below the recommended cut-off (200 $\mu\text{g/l}$) in eight cases (lorazepam only) which would not have been detected by immunochemistry alone.

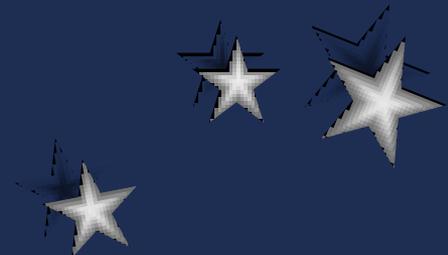


Table:

No.	LC -TOF MS screening result of Urine samples					
01	Lorazepam					
02	Lorazepam					
03	Lorazepam	Nitrazepam				
04	Lorazepam	Nitrazepam	Diazepam	Nordiazepam	Temazepam	Oxazepam
05	Lorazepam					
06	Lorazepam					
07	Lorazepam		Diazepam	Nordiazepam	Temazepam	Oxazepam
08	Lorazepam			Nordiazepam	Temazepam	Oxazepam
09	Lorazepam					
10	Lorazepam					
11	Lorazepam					
12	Lorazepam					
13	Lorazepam		Diazepam	Nordiazepam	Temazepam	
14	Lorazepam	Nitrazepam	Diazepam	Nordiazepam	Temazepam	Oxazepam
15	Lorazepam					

Discussion

- The syndrome of sudden unconsciousness of travellers and its association with lost property is widely known to the general public in Bangladesh.
 - The nature of patients of unknown poisoning from Dhatura to sedative which can be differentiated by skin condition, pupil size, relatively calm patient with uneventful recovery
 - Most victims become unconscious within 30 minutes after ingestion of offered substance
 - No focal neurological deficit was found.
 - Investigation including haemogram, kidney function test, ECG were unremarkable
 - Usually most patients recovered fully, left the hospital by their own
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Discussion:

- During 2006 total 309 patients were admitted in the same unit due to travel related poisoning

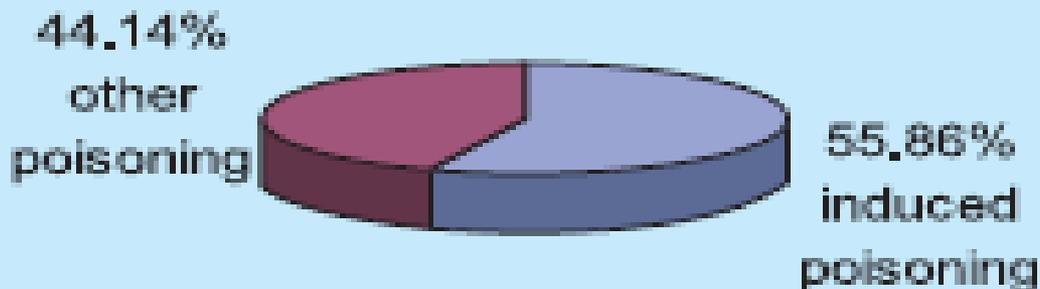
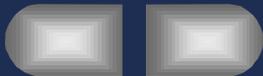


Fig 1: The ratio of poisoning and induced poisoning patients.

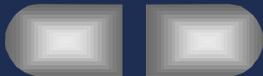
Discussion:

- Benzodiazepines are well-known agents in drug facilitated crimes, and their presence in the patients fully explained their clinical picture
- Toxicological analysis of the urine samples of 15 consecutive selected cases of travel-related suspected poisoning revealed the ingestion of benzodiazepine drugs .



Conclusion:

- **Our findings highlight the need for more extensive research in the neglected field of acute poisoning in Bangladesh.**
- **They should also encourage clinicians, public health and law enforcement agencies to establish national guidelines for the early diagnosis and clinical management of offending agents,**
- **And to investigate the problem of the illegal trade and criminal use of benzodiazepine drugs in this country.**



A photograph of a hospital ward with several patients lying on beds. The ward has a tiled floor and a metal railing on the left. Sunlight filters through a window, creating shadows on the floor. The word "Thanks" is overlaid in large, white, italicized text with a black outline.

Thanks

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