PUFFER FISH POISONING IN NORTHERN BANGLADESH

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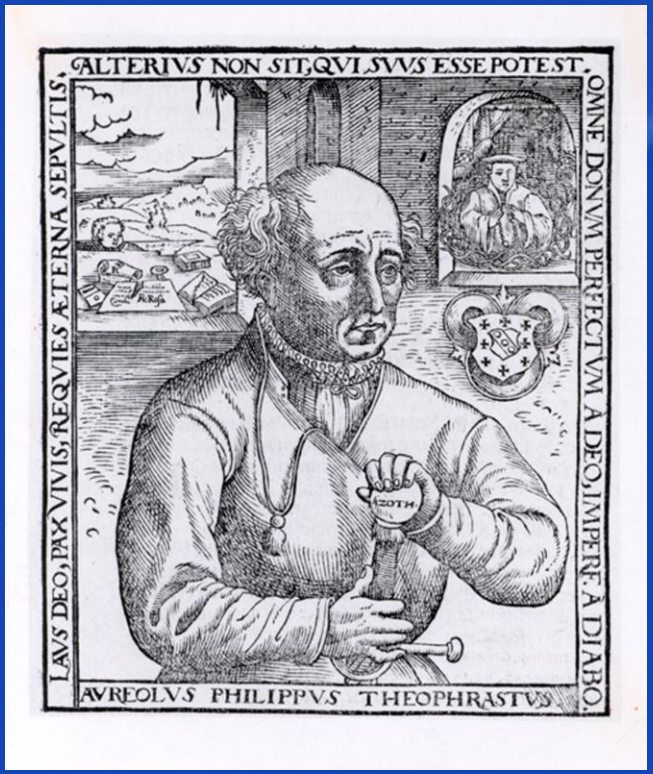


"All substances are poisons; there is none which is not a poison.
The right dose differentiates a poison from a remedy."

Paracelsus (1493-1541)

INTRODUCTION

- **Puffer fish is considered as a delicacy in some countries of the world.**
- **In Bangladesh, ingestion of puffer fish is not due to gustatory delight, it is a marker of poverty and ignorance.**

FUGU AS A DELICACY

Background

- On 8th June 2008, in Singra Upazilla of Natore, an unknown variety of fish appeared in local market.
- Very cheap rate prompted some poor people to buy and consume it.

The Offender Fish

- **83 patients with history of consumption of puffer fish became sick and were admitted in RMCH and Sadar Hospital, Natore.**
- **Family members who did not consume the fish were not affected.**

OBJECTIVE

- **To know the clinical features and outcome of Puffer fish poisoning.**

STUDY SITE

- Medicine and Pediatric department of RMC and district hospital of Natore.

METHOD

- Patients who became sick after puffer fish ingestion were included in this study.
- Clinical scenario were the main initial criteria for diagnosis which was later confirmed by toxicological assay.
- Blood and urine sample for tetrodotoxin assay was sent to Frankfurt, Germany.
- ELISA method was used for tetrodotoxin assay.

RESULT:

Age and sex distribution of the patients (n= 83)

Age (years0	No. of patients (%)	Male (%)	Female (%)
0-9	21 (25.3)	13 (15.66)	8 (9.63)
10-19	17 (20.48)	10 (12.04)	7 (8.93)
20-29	20 (24.09)	8 (9.63)	12 (14.45)
30-39	10(12.04)	7 (8.43)	3 (3.61)
40-49	9(10.48)	8 (9.63)	1 (1.20)
50-59	5(6.02)	3 (3.61)	2 (2.40)
60 and above	1(1.20)	1 (1.20)	0 (0)
	Total=83	50 (59.8)	33 (40.2)

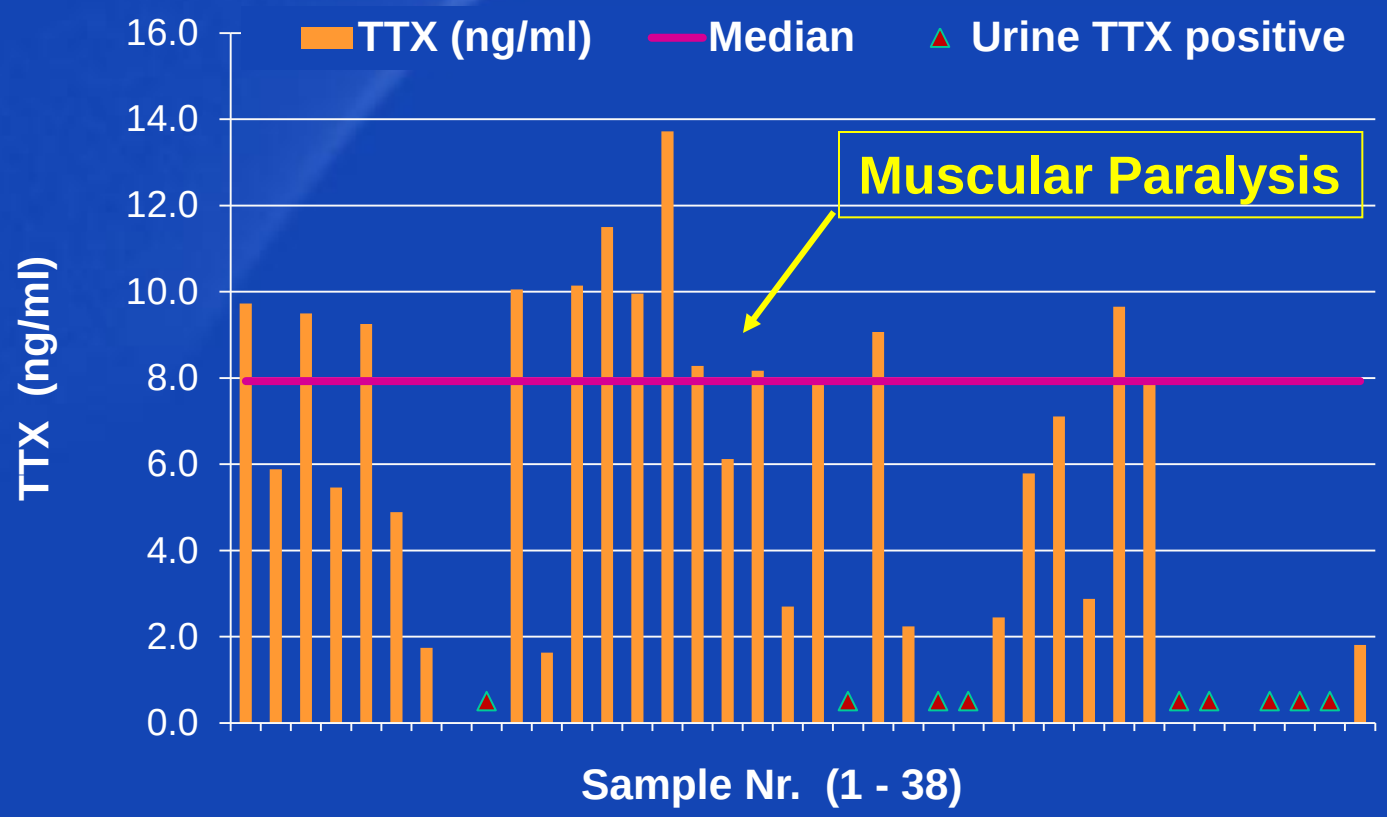
Onset of symptoms in patients with Puffer fish poisoning (n=83)

Time (minutes)	No. of patients (%)
<30	55 (66.24)
31-60	20 (24.09)
61-90	6(7.22)
91-120	1(1.2)
>120	1(1.2)

Symptoms of patients with puffer fish poisoning

Symptoms	Patients	%
Perioral paresthesia	**71**	**86**
Tingling sensation all over body	**50**	**60**
Nausea and vomiting	**43**	**52**
Dizziness	**35**	42
Headache	**20**	24
Abdominal pain	**13**	**16**
Weakness of upper and lower limbs	**13**	16
Vertigo	**11**	13
Cramps in lower limbs	**8**	**10**
Respiratory difficulty	**8**	10
Difficulty in speech	**7**	**8**
Blurred vision	**7**	8
Excessive salivation	**5**	**6**
Weakness of jaw muscles	**2**	**2**

Laboratory investigations



Outcome of the total event

Total number of patients	83	%
Patients developed paralysis	**13**	**15.6**
Total number of death	**7**	**8.4**

Quantity of puffer fish eaten and outcome:

Fish ingested (gm)	Patients	%	Fatalities
< 50	39	46	0
50-100	28	33	0
101-150	10	12	5
151-200	6	7	2

Conclusion

- Early diagnosis and supportive management could ensure a safe and favorable outcome.
- Physicians should be familiar with the clinical presentations and management and get prepared to handle such potentially life-threatening intoxication.
- Strong consideration should be given to establish a national toxicological reference laboratory.

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