PUFFER FISH ATTACK !

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Introduction

Puffer fish (Tetraodontidae), also known as globe fish or blow fish and some may call it balloonfish. There are more than 120 species of pufferfish worldwide and is commonly found in the shallow waters around Malaysia. To humans, tetrodotoxin from puffer fish is deadly, up to 1,200 times more poisonous than cyanide. There is enough toxin in one pufferfish to kill 30 adult humans, and there is no known antidote.

Case report

A 3 year old boy presented at emergency department with sudden onset bilateral lower limb weakness and vomited once. Upon arrival, child looks lethargy with laboured breathing and central cyanosis. There was no skin rashes, no audible wheeze or stridor, no periorbital and lips swelling. However, parents claimed child was well the whole day. Upon further questioning, parents told that they ate puffer fish for dinner. Mother experienced numbness over tongue and the child only took a small bit of it 2 hours prior to onset. Child was intubated in view of impending respiratory collapsed with type 2 respiratory failure. Patient was managed in ICU and was discharged well on day 3 of admission.

Discussion

The mortality from puffer fish poisoning remains disturbingly high at around 60%, and death usually occurs within the first 24 hours after ingestion of the toxin. The poison or tetrodotoxin of the puffer fish is a neurotoxin present in the liver, ovaries, intestines and skin of puffer fish. Tetrodotoxin is a heat stable neurotoxin that block sodium conductance and neuronal transmission in skeletal muscle, leading to weakness or paralysis and potentially death if ingested in sufficient quantities. The clinical features include body numbness, nausea, vomiting, abdominal pain, generalized weakness, hypotension, cardiac arrhythmias, and muscle paralysis. There is no specific treatment for tetrodotoxin poisoning and the management of puffer-fish poisoning is largely supportive.

Conclusion

In emergency situation, besides a thorough clinical evaluation and prompt treatment, physician must have a high index of suspicion the likelihood of acute poisoning or toxin exposure in patient who came with acutely ill with life threatening manifestation especially in pediatric group. A prompt diagnosis and immediate lifesaving intervention plays a major role in determine and improve patient clinical outcome.

Which has the highest LD_{50}?
Which has the lowest LD_{50}?

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Toxicant	LD_{50} (mg/kg)
Ethyl alcohol	10,000
Salt (sodium chloride)	4,000
Iron (Ferrous sulfate)	1,500
Morphine	900
Mothballs (paradichlorobenzene)	500
Aspirin	250
DDT	250
Cyanide	10
Nicotine	1
Black Widow Spider venom	0.55
Rattle Snake venom	0.24
Tetrodotoxin (from fish)	0.01
Dioxin (TCDD)	0.001
Botulinum Toxin	0.00001

References

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