Acute Kidney and Liver Injury Following Cyprinid Fish Gallbladder Ingestion: A Case Series from Thailand

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INTRODUCTION & METHODS

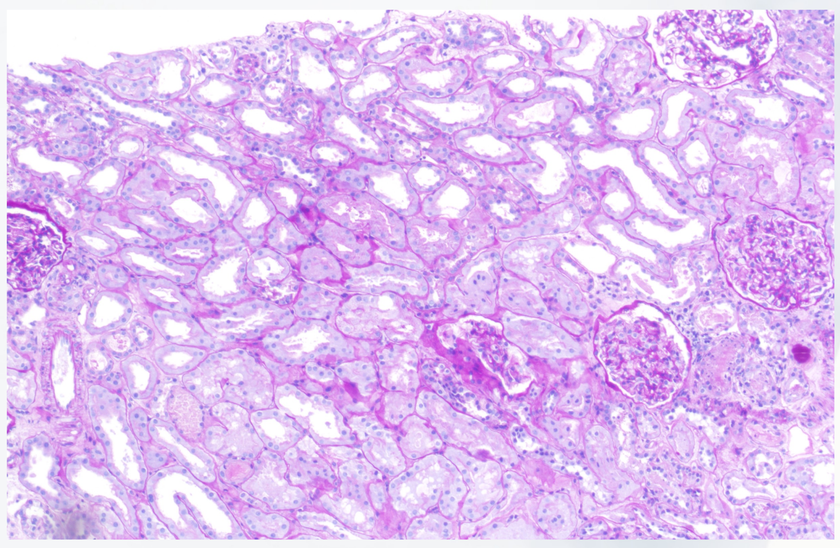
- Cyprinid fish gallbladders contain 5α-cyprinol sulphate, a natural toxin known to cause renal tubular epithelial and hepatocellular injury.
- In Thailand, these gallbladders are occasionally ingested as a traditional delicacy.
- We retrospectively reviewed 9 patients at Khon Kaen Hospital, Thailand, who developed acute kidney injury (AKI) and/or liver injury after ingestion of cyprinid fish gallbladders between July 2022 and June 2025.

Barbonymus gonionotus, the most common ingested species of cyprinid fish in this series

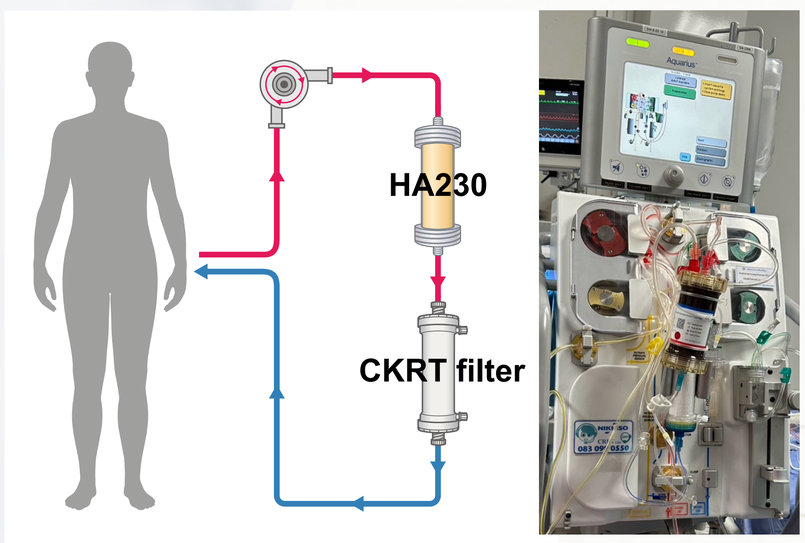
RESULTS

Patient No.	Sex/ Age	Fish Species	Gall-bladders Ingested	Peak AST (U/L)	Peak ALT (U/L)	Peak TB (mg/dL)	Peak DB (mg/dL)	Peak Cr (mg/dL)	Treatment	Outcome
1	M/60	*P. jullieni, L. rohita*	4	1,218	2,573	4.0	3.6	9.1	None	Survived, full recovery
2	M/58	*B. gonionotus*	4	2,168	3,485	23.6	18.8	15.1	NAC, HD (1)	Survived, CKD stage 3b
3	M/36	*B. gonionotus*	5	249	67	28.0	18.0	6.2	NAC, CKRT	Died (MOF)
4	M/31	*B. gonionotus*	4	5,308	2,173	4.3	2.2	1.4	NAC	Survived, full recovery
5	F/69	*B. gonionotus*	NA	395	1,096	10.3	6.4	9.7	None	Died (non-renal cause)
6	F/38	*B. gonionotus*	1	1,063	2,778	22.0	16.2	15.2	HD (5)	Survived, full recovery
7	F/61	*Henicorhynchus sp.*	3	434	104	2.1	0.9	4.4	CKRT	Died (MOF)
8	M/30	*B. gonionotus*	2	196	115	7.6	3.9	3.9	None	Survived, full recovery
9	M/32	*B. gonionotus*	NA	1,220	95	21.8	18.2	12.6	NAC, CKRT, HA	Died (MOF)
Median	-	-	-	1,063	1,096	10.3	6.4	9.1	-	-
Range	-	-	1 - 5	196 - 5,308	67 - 3,485	2.1 - 28.0	0.9 - 18.8	1.4 - 15.2	-	-

ALT = alanine aminotransferase; AST = aspartate aminotransferase; *B. gonionotus* = *Barbonymus gonionotus;* CKD = chronic kidney disease; CKRT = continuous kidney replacement therapy; Cr = creatinine; DB = direct bilirubin; HA = hemoadsorption; HD = hemodialysis (sessions); *L. rohita* = *Labeo rohita*; MOF = multi-organ failure; NAC = N-acetylcysteine; *P. jullieni* = *Probarbus jullieni*; TB = total bilirubin



Kidney pathology from patient no. 6;
periodic acid-Schiff (PAS) staining
widespread acute tubular injury with focal granular casts was noted,
no glomerular abnormality was detected



Extracorporeal treatment In patient no. 9
using CKRT with integrated hemoadsorption using HA-230 column

CONCLUSIONS

- To our knowledge, this is **the first reported case series in Thailand** describing cyprinid fish gallbladder ingestion causing severe AKI and liver dysfunction.
- **Most patients developed severe, non-oliguric AKI** requiring KRT, **accompanied by hepato-cellular-pattern hepatitis** in all cases, and had a high mortality rate.
- While some survivors recovered, others progressed to chronic kidney disease.
- These findings highlight **the need for public health measures to discourage this harmful traditional practice.**

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