Fatal *Aeromonas hydrophila* Bacteraemia Following Floodwater Exposure

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INTRODUCTION

Aeromonas hydrophila is a Gram-negative bacillus ubiquitous in fresh and brackish water environments. It is a recognized cause of human infections worldwide.

It is linked to aquaculture, ornamental fish and contaminated food. The true burden is underestimated due to diagnostic dilemmas and lack of structured surveillance.

In Sri Lanka, despite ecological prevalence in aquaculture, no published literature on human infections exists.

CASE REPORT

An eighty-year-old female presented with fever, backache and later developed altered level of consciousness. She was diagnosed with meningitis based on cerebrospinal fluid (CSF) analysis, although the CSF culture remained negative. Blood culture yielded *Aeromonas hydrophila*.

The patient had been exposed to floodwater, barefoot during Cyclone “Ditwah” two weeks prior to this presentation and had received a single dose of post-exposure prophylaxis for leptospirosis with doxycycline.

She received ceftriaxone at meningitic doses for fourteen days and was discharged after clinical improvement, although back pain persisted. Echocardiogram was normal.

Three weeks later, she was readmitted with septic shock and cellulitis at a previous cannula site and repeat blood culture yielded *Aeromonas hydrophila*. VITEK 2 analysis showed that the initial isolate was sensitive to ceftriaxone, while the subsequent isolate was resistant.

Delayed culture identification in resource-poor settings was noted. Despite escalation to meropenem and ciprofloxacin, the patient succumbed to sepsis within three days of hospitalization.

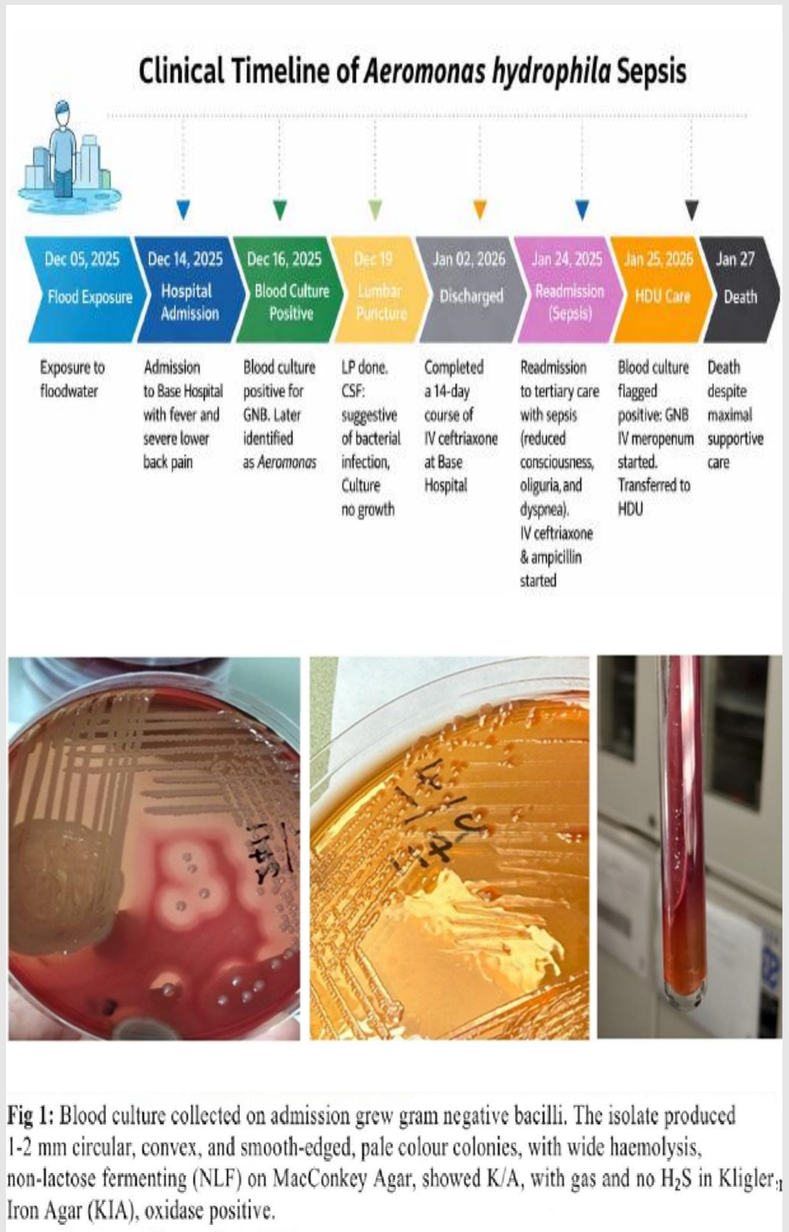

Fig 1: Blood culture collected on admission grew gram negative bacilli. The isolate produced 1-2 mm circular, convex, and smooth-edged, pale colour colonies, with wide haemolysis, non-lactose fermenting (NLF) on MacConkey Agar, showed K/A, with gas and no H_2S in Kligler Iron Agar (KIA), oxidase positive.

	16/12/2025 BH		25/01/2025 SJGH	
Piperacillin/Tazobactam	≥128	R	≥128	R
Cefuroxime	≤1	S	≥64	R
Ceftriaxone	≤0.25	S	≥64	R
Cefoperazone/Sulbactam	≤8	S	≥64	R
Cefepime	≤0.12	S	0.5	S
Imipenem	≥16	R	1	S
Meropenem	≥16	R	≥16	R
Amikacin	16	S	16	S
Gentamicin	≤1	S	≤1	S
Ciprofloxacin	1	S	1	S
Trimethoprim/Sulfamethoxazole	≤20	S	≤20	S

Table 1: MIC values of both isolates

DISCUSSION

Aeromonas should be considered a possible pathogen following floodwater exposure.

Readmission in this case raises the suspicion of a possible cannula site infection and/or unidentified spinal focus of infection following the primary bacteraemia.

In lower-middle-income countries delays in identification of *Aeromonas hydrophila* is a challenge due to resource limitations. Development of resistance to 3rd generation cephalosporins and carbapenems in the second isolate, possibly due to inducible Amp C cephalosporinase and Metallo-β-lactamase may have lead to treatment failure.

Therefore, prioritize source control if feasible and strengthen infection prevention measures.

KEY TAKE-HOME MESSAGES

Maintain clinical suspicion for *Aeromonas hydrophila* in patients presenting with sepsis after floodwater exposure.

Floodwater contact is a significant risk factor for acquiring Aeromonas infections.

Timely and accurate microbiological diagnosis is critical to guide effective therapy.

Third-generation cephalosporins and carbepenems may be unreliable in treating *Aeromonas hydrophila* infections due to inducible resistance mechanisms that can compromise efficacy.

Strengthen laboratory capacity and adopt a One Health surveillance approach to monitor emerging aquatic pathogens across human, animal, and environmental interfaces

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