

Abstract

Introduction - Leptospirosis is a zoonotic illness which commonly reports in Sri Lanka among farmers. It is a widespread disease in both temperate and tropical countries but commoner in tropics. Though it has reported throughout the year; there are two peaks which has observed coincidentally with paddy cultivation. It is caused by pathogenic spirochetes of the genus *leptospira*. Patients usually present as an acute febrile illness with associated symptoms like headache, myalgia, nausea, vomiting. Signs of organ involvement become apparent in severe disease. Most common organ involved is kidney. Interstitial nephritis and acute tubular necrosis are the main pathogenic mechanisms involving acute renal injury. 40% - 60% of patients develop acute kidney injury in severe leptospirosis. Among them 20% associated with mortality according to national data. Leptospirosis induced acute kidney injury is usually hypokalemic and non-oliguric. Tubular defects precede a decline of glomerular filtration rate (GFR) causes high frequency of hypokalemia. Presence of hyperkalemia and oliguria or anuria pretend poor prognosis. Hypokalemic paralysis as a first presentation is very rare in literature though hypokalemia is relatively common.

Case presentation - Here we present a 38-year-old previously healthy, gentleman from Sri Lanka presented with insidious onset generalized weakness and quadriparesis. Muscle power had diminished on admission in both upper and lower limbs. No sensory symptoms or signs. There was no history of fever but he has taken frequent analgesics for body aches and myalgia. Serum potassium was very low on admission suggestive of interstitial nephritis and renal potassium wasting. ECG showed widespread U waves and arterial blood gas indicated partially compensated metabolic acidosis. Nerve conduction studies with electro myelogram suggested AIDP features with doubtful significance.

During the hospital stay patient developed oliguric acute renal failure followed by shortness of breath. Auscultation of lung fields revealed diffuse crepitations all over the lung fields and saturation was 85%.

Chest X ray findings suggestive of pulmonary hemorrhage and renal functions revealed acute renal insufficiency. Urgent potassium replacement done parenterally and weakness improved dramatically. Leptospirosis rapid antibody test and MAT test were positive. Patient was managed with 3 cycles of plasmapheresis and 3 cycles of renal replacement therapy with hemodialysis. He dramatically improve with treatment.

Conclusion - Hypokalemia in leptospirosis is common due to interstitial nephritis and renal potassium wasting. But hypokalemic paralysis as the initial presentation without a history of acute febrile illness is very rare in literature. That mimics Guillen barre syndrome. Careful history taking is important because patients may take several antipyretics and analgesics and they may mask the fever. Early suspicion according to clinical picture and appropriate care will improve the outcome. Diagnostic delay of severe complications will be detrimental.