

A Challenging Case of Severe Rhabdomyolysis Due to Severe Influenza B Virus

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Abstract:

A case of viral infection causing ARDS and rhabdomyolysis with very high CPK, renal failure requiring assisted ventilation. He was started on Oseltamivir despite H1N1 being negative. The respiratory package revealed virus B positive. In every case of severe viral infection with complications, it is better to do a respiratory virus package. She also required dialysis.

Case summary:

18 years old male admitted with symptoms of viral fever with lower respiratory tract infection with high-grade fever admitted to ICU for respiratory distress and hypoxia. He was started on empiric antibiotics. His initial blood workup showed altered renal functions and CPK Of 32,000, suggestive of rhabdomyolysis.

His H1N1 PCR test was negative. Oseltamivir was continued with suspicion of viral etiology. He didn't improve, and his creatine phosphokinase (CPK) levels increased to 2,57,165. His worsening renal function required the initiation of hemodialysis. The respiratory panel showed influenza b positive. He was intubated and given assisted ventilation.

Since he had difficulty weaning, he underwent a tracheostomy and was connected to a ventilator. He recovered from renal failure, and his CPK levels were normal after three cycles of hemodialysis in the ICU. Gradually, over a period of time, he improved, and his tracheostomy was de-cannulated after one month. Follow up after ten days. He had normal renal and liver parameters, CPK levels, and a normal chest x-ray.

As our patient had a history of cerebral palsy and with his clinical presentation, it was

suspected that viral infection might cause his rhabdomyolysis. The mechanism of muscle damage due to viral infections has not been established and may be because of direct viral invasion of muscle tissue or the release of myotoxic cytokines. He was a suitable candidate because of his pre-existing muscle disease. There were few case reports suggestive of Influenza B causing Rhabdomyolysis. None of the cases reports in the past had such high levels of CPK (2,59,000)

Treatment:

As per current CDC guidelines, treatment options for influenza B are oral oseltamivir, inhaled zanamivir, and intravenous peramivir. Due to the unavailability of the latter two, we used oseltamivir through a nasogastric tube in our patient.

Discussion:

Rhabdomyolysis is a condition in which there is breakage of skeletal muscles causing symptoms like pain, weakness, swelling, tenderness, and possible kidney failure. Muscle cramping is a milder form. Force and trauma are the leading causes. It impacts the kidney if not taken care of properly.

Pathogenesis:

- Injury to the muscle
- breakdown of proteins
- Renal failure
- Triad of rhabdomyolysis- 1. Pain, 2. Renal failure, 3. Dark-colored urine.
- Dark-colored urine
- Causes are viral infections, heat stroke
- Trauma, electrical lightning injury

- Drugs, alcohol
- sepsis

How to prevent:

- Good fluid therapy
- Early renal replacement therapy
- Inherited causes are autoimmune where glycogen fatty acid metabolism is deranged, sickle disease
- CPK elevated in virus A or B maximum from literature is 2,00,000, our case 2,60,000.

CPK value trend:

Days from Admission	Day 1	Day 3	Day 5	Day 7	Day 18	Post Discharge Day 10
CPK Value	18,120	31,240	2,16,750	2,57,165	9080	89

Investigation- lacuna:

The common clinical practice in India is sending a throat swab for H1N1 PCR, but this does not detect influenza b, which could also cause rhabdomyolysis. We suggest that testing for

influenza B should also be done in patients with suspected viral pneumonia with rhabdomyolysis.

Conclusion:

We conclude that very high CPK levels and acute kidney injury in the setting of respiratory infection should always raise the suspicion of influenza b causing rhabdomyolysis.

The H1N1 PCR is commonly done in India to detect pandemic Influenza. It fails to detect Influenza B. We suggest that in patients with viral pneumonia and rhabdomyolysis, specific testing for influenza B should be performed, failing which oseltamivir should be continued.

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