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RHABDOMYOLYSIS- A RARE COMPLICATION OF ENTERIC FEVER

Medicine

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ABSTRACT

- A Young Female presented with fever, diarrhea and acute renal failure in absence of hypovolemia, hypotension, hemolysis, thrombocytopenia and pre-existing renal disease with no past history of DM and Hypertension.
- P/S for malarial parasite and PfHRP antigen test was negative
- On evaluating further for cause of ARF, her CPK-TOTAL and urin for myoglobin found to be raised in absence of muscle weakness.
- On further investigation she was not found to be having any other risk factor for rhabdomyolysis like toxins, seizures, drugs, inflammatory myopathy, vigorous exercise and family history of muscle disease.
- Her S.Igm for S.typhi and clot culture was positive and S.widal had an increasing titre for Enteric fever.
- She was treated successfully with antibiotics and sodium bicarbonate and was cured.
- Rhabdomyolysis is documented to be occure with infectious diseases and viruses are the most common cause of it.
- This is reported case of rare presentation of enteric fever as rhabdomyolysis.

KEYWORDS

RHABDOMYOLYSIS

- **DEFINITON-**

Rhabdomyolysis is breakdown of muscle fibre with leakage of potentially toxic cellular contents into systemic circulation by elevated CPK-Total and myoglobinuria leading to ARF.

- **Causes-**

Muscle exertion (seizures, exercise)
Muscle Injury (trauma, electric shock, malignant hyperthermia)
Infections (Influenza, legionella, enteric fever, dengue fever)
Toxins and Drugs (ethanol, snake bite, statins, salisylates)
Immunological diseases (polymyositis, dermatomyosities)

- **Mechanism:**

Myoglobin cause intrarenal vasoconstrictions by scavengering Nitric oxide.

Myoglobin, a source of ferrihemate, which causes intratubular obstruction.

Direct tubular injury by production of OH-

CASE REPORT

- A 22 years old female, mother of 2 children with no past medical or surgical history was admitted with fever for 4 days associated with diarrhea, vomiting and decreased urin output.
- The illness begun with fever which was initially low grade and then gradually increases over 3-4 days which was continuous in nature without any rash or bleeding manifestation'.
- Patient also had diarrhea with abdominal pain, watery in nature, not containing any blood , pus or mucus with 3-4 episodes/day associated with vomiting. For past 1 day she had C/o decreased urin output.
- Patient denied of having any weakness, muscle tone, seizure, vigorous exercise or trauma. She had no past history of DM, HT, hypothyroidismor any drug, family or allergic history. Patient had no sign of dehydration, chronic kidney disease or not taking any nephrotoxic medications.
- On admission she had T.101* F, Pulse-110/min, BP-110/76mmhgin standing and 116/80 in supine position with RR of 14/min.
- On general examination she had Pallor, facial edema and periorbital puffiness with no signs of jaundice, clubbing, cyanosis and lymphadenopathy.
- Her respiratory and CVS examination was normal. Abdomen was soft, non distended without hepatospleenomegaly. She was conscious.

LAB INVESTIGATIONS

On admission,

- Haemoglobin-8.68 mg/dl
- WBC count- 11500/cu mm, Platelets-169000/cu mm
- P/S- microcytic hypochromic RBC with no malarial parasite and fragmented RBC.
- Urea- 52 mg/dl, Creatinine- 2.42 mg/dl
- Billi-0.7 mg/dl, ALP-99 mg/dl, ALT-23 mg/dl, Na-130 meq/l, K-5.3 meq/l,
- Chest x-ray- normal, ECG- tall T waves.
- Initial stool examination was normal and Urine was devoid of any cast, sediment or RBC.
- Urin for Hb- negative
- PfHRP for malarial parasite, Leptospirosis Ig M and Dengue Ig M were negative.
- Initial S.Widal was negative.
- **S.typhi Ig M- positive**
- Blood culture and clot culture was sent.

- **Over next 3 days** output decreased to 300 ml/d, which was dark in color
- Repeat WBC- 9890/cumm, APC- 190000/cumm
- CPK Total-961 u/l (N<238 u/l)
- **Urine for Myoglobin- 1058 u/l.**
- Urine-r/m – no albumin, cast, crystal or pus cells.
- USG- normal size kidney, no sign of urinary retention.
- Fe Na> 1 and Ca++ -9.2 meq/l, PO4- 3.2 meq/l, uric acid- 1.4 meq/l
- S.Fe- 6 mcg/dl, TIBC- 267 meq/dl, S.Ferritin: 194 mcg/l

After 3 days,

- **CPK-Total** was 7590 u/l
- **Clot culture- positive for S. typhi,** Blood culture- no growth.

We treated her with iv antibiotics, iv fluids and sodium bicarbonate infusion, Creatinine remained static for 3 days. After 4th day urin output

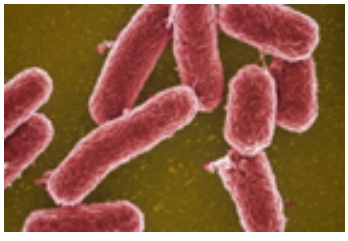
increased gradually with decline in creatinine. Patient had normal creatinine and urine output on 8th day. Patient was discharged on day 10 with normal renal function and urine output of 1.5lit/ day.

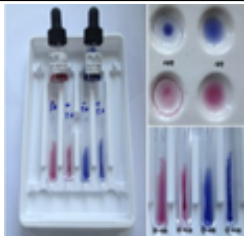
Heamatological parameters became normal with no fall in Hb.

- Blood, urine and stool culture did not show any growth.
- **Repeat S.Widal was positive in with H titre 1:480.**

RHABDOMYOLYSIS WITH MYOGLOBINURIA

Muscle Injury	Trauma, electric shock,hypothermia, hyperthermia (eg.malignant hyperthermia)
Extreme Muscular exertion	Seizures, delirium tremors, physical exercise
Muscle Ischemia	Prolonged Compression(eg. coma) compromise of major vessels(eg.thromboembolism, dissection)
Metabolic disorders	Hypokalemia, hypophosphatamia, hypo- and hypernatremia, diabetic ketoacidosis, hyperosmoler states
Infection	Influenza, infectious mononucleosis, legionairres' disease, tetanus
Toxins	Ethanol, isopropyl alcohol, ethelyne glycol, toluene, snake and insect bites
Drugs	Cocaine, HMG CoA reductase inhibitors, amphetamines, phencyclidine, lysergic acid, diethylamide, heroin, methadone, salisylates overdose, succinylcholine
Immunologic disease	Polymyositis, dermatomyositis
Inherited disease	Myophosphorylase, phosphofructokinase, carnitine palmityltransferase, myoadenylate deaminase deficiency





DISCUSSION

Patient was admitted with fever and diarrheal illness and oliguric ARF. We started with routine investigations to find out etiology of febrile illness. She was tested negative for malaria, dengue, leptospirosisand UTI and her s.creat was high and Fena>. She was not having any signs of hypovolemia, hypotension, urinary retention and pre existing renal disease.

For initial 3 days her urine output was adequate and normal in color. On 4th day urine output decreased with change in color. That gave clue to go for CPK-Total and URINE FOR MYOGLOBIN. Both tests turned out to be significantly positive and lead us to diagnosis of RHABDOMYOLYSIS. As she had no history of any drug ingestion, trauma, seizure, exercise, or any weakness, we searched for infectious cause for rhabdomyolysis.

Pattern of fever with abdominal pain was the next clue as it was continous and step ladder like, so we went for S.widal which was negative. But her **clot culture** and **Igm for S.typhi** were positive, with **positive s.widal** on repeating in 2nd week of illness.

Her increase in CPK-Total finally stampedthe possible diagnosis of enteric fever complicated by rhabdomyolysis and ARF.

CONCLUSION

Common infective agents, like Salmonella typhi and paratyphi can present in unusual ways. In a patient presenting with fever, diarrhea and ARF due to acute rhabdomyolysis, not adequately explained by pre-renal azotemias, HUS or other common possible causes, the search for other common infectious etiologies should be made diligently. Rhabdomyolysis has been reported infrequently with salmonella species infection and only rarely with Salmonella typhi. Here we present a severe case of Salmonella typhi infection complicated by rhabdomyolysis and acute kidney injury.

DISCLAIMER- No conflict of interest, no any financial assistance.

References

1. THE KIDNEY: Brenner and Rector, 8th edition. Chapter 29, acute kidney injury.
2. Rhenoid OJ, Greenwald RA, Hayes PJ, Tadesco FJ, Myglobinuria and renal failure associated with typhoid fever. JAMA 1997;238-341
3. Harrison's principles of internal medicine, 19th edition.