Case Report

Indian Journal of Emergency Medicine
Volume 3 Number 2, July - December 2017
DOI: http://dx.doi.org/10.21088/ijem.2395.311X.3217.30

Life Threatening Rhabdomyolysis, A Rare and Unusual Presentation with Rosuvastatin Ingestion

Umran Rafeeq Sheikh[1], Kishalay Datta[2], Priya Govil[3], Deepika Mittal[1]

Author's Affiliation:
[1]Masters in Emergency Medicine, PGY-3, [3]Associate Consultant, Department of Emergency Medicine, Max Healthcare, Saket, New Delhi, Delhi 110017, India.
[2]HOD,Associate Director, Department of Emergency Medicine, Max Hospital, Shalimar Bagh, New Delhi, Delhi 110088, India.

Corresponding Author:
Umran Rafeeq Sheikh,
Masters in Emergency Medicine, PGY-3, Max Healthcare, Saket, New Delhi, Delhi 110017, India.
E-mail: documran@gmail.com

Received on 25.05.2017,
Accepted on 13.06.2017

Abstract

Rhabdomyolysis is the breakdown of skeletal muscle which is found commonly associated with crush injuries, compartment syndromes, strenous exercise and drug abuse but rarely found due to consumption of medications like statins. Here we present a case of a 62 year old male who had presented to the emergency roomwith paraplegic, myalgia and hyperkalemia after about a month of being started on statins. Further clinical and laboratory evaluation were suggestive of a diagnosis of statin induced rhabdomyolysis causing acute renal failure and hyperkalemia. Awareness about the adverse effects of individual statins may help develop a clinical suspicion of rhabdomyolysis among the Emergency physician and also helpother physicians make better decisions in the choice of statin use and promote regular monitoring of CPK levels in preventing incidences of rhabdomyolysis.

Keywords: Rhabdomyolysis; Statins; Acute Renal Failure; Hyperkalemia; Paraplegia; Myalgia.

Introduction

Rhabdomyolysis associated with the use of statins has been demonstrated to be a rare but potentially life-threatening adverse effect of statins. The incidence of rhabdomyolysis has been 1.6 per 100,000 person-years [1]; the US FDA Adverse Event Reporting System database has reported the rates of statin-induced rhabdomyolysis of 0.3–13.5 cases per 1,000,000 statin prescriptions [2]. Among the patients with rhabdomyolysis, 10-40% have been estimated to develop ARF [3]. Here, we report a rare case of rhabdomyolysis in a patient who had started usingrosuvastatin and developed acute renal failure (ARF) and hyperkalemia which necessitated the initiation of dialysis.

Case Report

A 62yearold male, brought with history of progressive bilateral lower limb weakness with muscle pain since 4 days along with burning micturation since 3 days and decreased urine output. He had no history suggestive of trauma, fever, immobilisation, seizures.

On primary survey; his Airway was patent; Breathing, the respiratory rate was 16/min with a saturation of 98% on room air; Circulation, heart rate was 98/min with a blood pressure reading of 130/70mmHg, Peripheral pulses felt regular an bilaterally equal and a capillary refill time of less than 3 seconds. Disability, the patient was drowsy but responding to verbal commands, moving all four limbs with a GRBS of 220mg/dL. Icterus was seen.

On secondary survey; there were features suggestive of Pallor, Icterus, Cyanosis, or dehydration. Chest had equal air entry bilaterally with no adventious sounds, heart sounds S1S2 heard with no murmurs and a normal JVP; Abdomen was soft, non-tender with no organomegaly.

Central nervous system examination, he was Conscious and Oriented. But Motor examination revealed a power of 4/5 in both upper limbs and 2/5 in both the lower limbs. Weakness more marked in proximal muscles. No sensory deficit could be

elicited. Deep tendon reflexes were normal and plantars were flexor. Bilateral Pedal oedema was seen.

He was a known diabetic and coronary artery disease had undergone percutaneous coronary angioplasty about a month prior to presentation. His medication history revealed he had been on oral hypoglycemic agents from a long time and that he had been recently since a month been started on Asprin 75mg and rosuvastatin 40mg once a day.

Among the Point of Care Investigations Done in the Emergency; ECG was suggestive of Global Broad Complex QRS with tented tall T waves. Arterial blood gas revealed partially compensated severe metabolic acidosis, Serum Lactate of 0.8mmol/L, Serum Sodium of 119mmol/L and Serum Potassium of 7.8mmol/L. Urine dipstick done revealed blood +++, proteins +.

Following this he was managed with appropriate anti-hyperkalemic measures and shifted for urgent haemodialysis.

Haemogram – Haemoglobin was 12g/dL, TLC of 10,400/mm3, Platelets 200,000/mm3; Renal profile – S.Urea 270mg/dL, S.Creatinine 7.24mg/dL, S. Sodium 134mEq/L, S. Potassium 4.4mEq/L S. Chloride 94mEq/L

Liver function tests – S.Albumin 3.4g/dL, S. Globulin 2g/dL, Total bilirubin 0.7mg/dL, unconjugated bilirubin 0.3mg/dL, Alkaline phosphatase 120U/L, SGOT 31 IU/L and SGPT 40IU/L Serum LDH of 2040 U/L and a S. CPK of 74, 500 U/L.

A collaboration of clinical and lab findings lead us to a diagnosis of statin induced rhabdomyolysis leading to acute renal failure and hyperkalemia. Immediate hemodialysis and withdrawal from statins, was the last resort to provide relief in clinical symptoms and decrease CPK levels.

Discussion

Statins have been used for the prevention and treatment of cardiovascular disease. The treatment is quite safe but not free of side effects. Adverse effects on muscles occur in approximately 5 to 10% of patients taking statins which are usually mild and disappear upon discontinuation of the medication [4].

Rarely, the creatine phosphokinase (CPK) enzyme level may increases to exceptional values (10 times the upper normal level) and rhabdomyolysis is extremely rare. A few of the factors that may increase the risk of myopathy among statin users are; Elderly, Female sex, Multi-systemic diseases, Frailty, small body frame, Multiple medications, Perioperative period, Concomitant use of drugs (such as Fibrate, Nicotinic acid/ Cyclosporine, Azole antifungal, Macrolide antibiotic, Erythromycin and Clarithromycin, HIV protease inhibitors, Verapamil, Warfarin, Digoxin, Alcohol).

Rhabdomyolysis has been seen to present withmyalgias, weakness, fatigue, and dark coloured urine, which usually develop within a few days of starting the treatment [5]. It is common to see muscular and renal adverse effects in association with statinuse as seen in our patient. Among these; muscular adverse effects like myopathy, rhabdomyolysisand increase in CPK levels have been more strongly associated with rosuvastatin use and; acute renal failure seen to be more strongly associated with atorvastatin use [6].

For patients being managed solely with statin drugs, the incidence of muscularadverse effects has been reported as 0.1% to 0.2% [7]. However, the incidence increases to 1% to 7% for patients taking multiplemedicationsand those with multiple risk factors for developing adverse events [7]. With the growing number of drug permutations and combinations, great deal of suspicion and awareness is required among the ER physicians.Current recommendation are to obtain a prior baseline CK level of patients with increased risk of musculoskeletal disorders and routine monitoring only for those who experience muscle pain or weakness [8].

Knowledge about adverse effects of individual statin may lead to change inchoice of statin use and regular monitoring of CPK levels at the primary stage ofinitiation.

Conclusion

The clinical manifestations of rhabdomyolysis associated with statin use are varied and Rhabdomyolysis associated with rosuvastatin monotherapy is extremely rare and may result in potentially fatal myoglobinuria with acute renal failure. In similar ED presentations, diagnosis of statin induced rhabdomyolysis by ER physician would require vigilance to help improve the outcome. Diagnosis requires a high degree of clinical suspicion.

A large number of patients developing such adverse effects are unaware and go undiagnosed and untreated. Therefore, further research needs to be

directed as to what drug levels would guide the dosing, frequency and stopping & changing over to different drug; how frequently should the drug levels be monitored and as to what drug dosage & duration of treatment would cause these derangement. Although statins provide medical benefits, they should always be prescribed with caution and attention directed towards appropriate dosage adjustments with minimal side effects.

References

1. Law M et al.Statin safety: a systematic review. Am J Cardiol. 2006 Apr 17;97(8A):52C-60C.
2. Davidson MH et al.Statin safety: an appraisal from the adverse event reporting system. Am J Cardiol. 2006 Apr 17;97(8A):32C-43C.
3. Kasaoka S et al.Peak value of blood myoglobin predicts acute renal failure induced by rhabdomyolysis. J Crit Care. 2010 Dec;25(4):601-4.
4. PohjolaSS et al. Muscle-related adverse effects of statins. Duodecim. 2014;130:1622–7
5. Torres PA et al.Rhabdomyolysis: Pathogenesis, Diagnosis, and Treatment. The Ochsner Journal, 2015; 15(1):58–69.
6. Sakaeda T et al. Statin-Associated Muscular and Renal Adverse Events: Data Mining of the Public Version of the FDA Adverse Event Reporting System. PLoS ONE 2011;6(12):e28124.
7. Tomlinson SS et al. Potential adverse effects of statins on muscle. Phys Ther. 2005;85:459.
8. Mlodinow SG et al. Statin adverse effects:Sorting out the evidence. The Journal of Family Practice. 2014 Sep;63(9):497.
9. Kato K et al. Pravastatin-induced rhabdomyolysis and purpura fulminans in a patient with chronic renal failure. International Journal of Surgery Case Reports 2015;8:84.
10. Stasi S L D et al. Effects of Statins on Skeletal Muscle: A Perspective for Physical Therapists. Phys Ther. 2010 Oct;90(10):1530.