Editorial
Volume 10:2, 2020
DOI: 10.37421/jnt.2020.10.e101

Journal of
Nephrology & Therapeutics

ISSN: 2161-0959 Open Access

Rhabdomyolysis Induced Acute Kidney Injury: Aetiologies, Presentations and Treatment

Lavjay Butani*

Department of Pediatrics, Chief Pediatric Nephrology, University of California, USA

Editorial

Rhabdomyolysis represents a clinical and biochemical syndrome due to dissolution of the skeletal muscles by leakage of muscle cell contents like proteins, myoglobin and electrolytes into the blood circulation. Global prevalence of Rhabdomyolysis is estimated at 26,000 cases per year. It could be either traumatic or non-traumatic in nature resulting in massive necrosis and acute kidney injury. The most common causative categories include exertion, muscle hypoxia, genetic defects, infections, metabolic disorders and drugs and toxins [1]. Rhabdomyolysis leads to a wide range of conditions from asymptomatic increase in creatine phosphokinase to acute kidney injury. Rhabdomyolysis potentially causes several adverse effects on the kidney including oxidative stress, inflammation, apoptosis, vasoconstriction, and tubular obstruction. It has been reported previously that the demographic, clinical and laboratory variables can predict the risk of renal replacement therapy [2]. The incidence of acute kidney injury ranges from 33 to 50% among rhabdomyolysis patients and early detection along with saline volume expansion can reduce the risk of kidney damage [3]. It has been reported that iron chelators, anti-oxidant, vasoconstriction inhibitors and anti-inflammatory therapies were efficacious in experimental animal model studies primarily based on the neutralization of adverse effects caused by myoglobin.

Among the latest publications on Rhabdomyolysis and acute kidney injury is the case series reported by Mamidi and Shekar [4] from India. The authors have identified sixty four Rhabdomyolysis patients and observed them over a period of one year. It was observed the almost 37% percent of them were affected with acute kidney injury. The findings are consistent with previous review studies. The authors have retrospectively studied the association of Rhabdomyolysis and acute kidney injury in eight patients with an aim to study the varied aetiologies, the presentation, clinical profile and outcome in patients with acute kidney injury. The study revealed that the acute kidney injury due to Rhabdomyolysis is related to diverse comorbidities including bacterial sepsis, statin mediated, chemotherapy induced, herbicide poisoning, cocaine abuse, trauma, strenuous exercise, metabolic myopathy and therefore it was emphasized that high index of suspicion is required for Rhabdomyolysis patients with kidney injury. Rhabdomyolysis exhibits symptoms such as myalgia, and myoglobinuria [5]. Treatments included hydration, alkaline diuresis or invasive renal replacement. A fall in serum creatinine along with the decrease in creatine phosphokinase levels is regarded as a desirable prognosis therefore timely intervention was emphasized.

References

1. Bosch, Xavier, Esteban Poch and Josep M Grau. “Rhabdomyolysis and acute kidney injury”. *New England Journal of Medicine* 361 (2009): 62-72.
2. McMahon Gearoid M, Xiaoxi Zeng and Sushrut S Waikar. “A risk prediction score for kidney failure or mortality in rhabdomyolysis”. *JAMA Intern Med* 173 (2013): 1821-1827.
3. Athayde Lima, Rafael Siqueira, Geraldo Bezerra da Silva Junior, and Alexandre Braga Liborio, et al. “Acute kidney injury due to rhabdomyolysis”. *Saudi J Kidney Dis Transpl* 19 (2008): 721.
4. Panizo, Nayara, Alfonso Rubio-Navarro, Juan Manuel Amaro-Villalobos and Jesús Egido, et al. “Molecular mechanisms and novel therapeutic approaches to rhabdomyolysis-induced acute kidney injury”. Kidney Blood Press Res 40 (2015): 520-532.
5. Mamidi Varun and Manikantan Shekar. “Acute Kidney Injury and Rhabdomyolysis”. *J Nephrol Ther* 10 (2020).

***Address for Correspondence:** Lavjay Butani, Professor of Pediatrics, Chief Pediatric Nephrology, University of California, Davis 2516 Stockton Blvd., Room 348 Sacramento, CA 95817, USA, Tel: 916-734-8118; Fax: 916-734-0629; E-mail: lbutani@ucdavis.edu*

Received 07 February 2020; **Accepted** 17 April 2020; **Published** 21 April 2020