

Fatal SARS-CoV-2 Associated Rhabdomyolysis Requires Elucidation

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With interest we read the article by Anwar et al about a 16 years old male with COVID-19 complicated by rhabdomyolysis who died 3 days after admission because of rhabdomyolysis.¹ It was concluded that “clinicians should be aware of rhabdomyolysis and maintain a high index of suspicion in cases of COVID-19 presenting with extra-pulmonary symptoms.”¹ We have the following comments and concerns.

We do not agree with the statement “with no known medical illness” in the case description as the patient had a history of “viral illness which progressed to myositis and rhabdomyolysis” 1 year prior to the COVID-19 infection.¹ This issue is important as an episode of rhabdomyolysis requires extensive work-up after recovery. Not only should the individual and family history be taken carefully and the patient examined neurologically, he also should have blood tests for creatine-kinase, lactate, and myositis antibodies, needle electromyography, repetitive nerve stimulation, muscle imaging, but eventually also muscle biopsy and genetic studies to uncover the cause of previous rhabdomyolysis.² Genetic studies are indicated if the family history is positive for neuromuscular disorder (NMD) or if the clinical presentation suggests a hereditary NMD. When taking the individual history it is crucial to record all drugs an individual with a history of rhabdomyolysis is regularly taking but also to explore the nutritional habits of such a patient.

Concerning the family history, it is missing if it was positive for NMD, if the parents were consanguineous, and if any of the first degree relative ever had experienced and episode of rhabdomyolysis or malignant hyperthermia or malignant hyperthermia-like episode during general anesthesia.

Missing in the report are results of blood tests, such creatine-kinase, myoglobin, creatinine, glomerular filtration rate, C-reactive protein, and differential blood cell count. Missing is also the cause of death. The title includes “fatal rhabdomyolysis” but the intensity of rhabdomyolysis is not documented. If rhabdomyolysis was the cause of death we should know if rhabdomyolysis was complicated by renal failure, respiratory insufficiency, or if also the myocardium was involved. Missing is the medication that was applied to treat COVID-19.

We do not agree that only few cases of SARS-CoV-2 associated rhabdomyolysis have been reported. In a recent review about the topic 32 cases as per the end of December 2020 were presented.³ In this review 4 patients under the age of 21 years were presented, contradicting the statement that only a single patient with rhabdomyolysis as a complication of COVID-19 had been reported.¹ The most common cause of rhabdomyolysis among these 32 patients were side effects of myotoxic drugs given to treat SARS-CoV-2 and only rarely due to viral myositis.

Overall, the study has a number of shortcomings, which need to be addressed before drawing final conclusions. Missing is an extensive work-up after the first episode of rhabdomyolysis, missing are test results during the second episode of rhabdomyolysis, missing is the drug history and the family history, and missing is the autopsy.

Author Contribution

JF: design, literature search, discussion, first draft, critical comments, final approval.

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Informed consent

The study was approved by the institutional review board.

Statement of Ethics

Statement of ethics was in accordance if ethical guidelines.

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