






Rhabdomyolysis or Myositis following a SARS-CoV-2 Vaccination

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We read with interest the article by Kalekar et al about a 31 years old female (health care worker) with a sedentary lifestyle, who developed myalgia and muscle swelling of the right lower leg muscles 10 days after vaccination with a recombinant chimpanzee adenovirus vector vaccine encoding the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) spike (S) glycoprotein (vector-based, presumably AstraZeneca vaccine).¹ One day later, pain occurred also in the shoulder muscles bilaterally.¹ Treatment and outcome were not reported.¹ The study is appealing but has several limitations that raise concerns and should be discussed.

We disagree with the statement in the discussion that there is no previous evidence of any postvaccination rhabdomyolysis in association with the use of vector-based vaccines.¹ In a recent report by Cirillo et al, rhabdomyolysis was diagnosed in a 68 years old, previously healthy male 9 days after the first dose of the AstraZeneca vaccine.² The patient developed multiorgan failure involving bone marrow, liver, lung, and kidneys, which was treated with steroids, anakinra, and eculizumab.² Despite this treatment, the patient died from multilineage cytopenia, untreatable hypotensive shock, and hypoglycemia and 48 days after vaccination.²

There are also concerns regarding the diagnosis “rhabdomyolysis.”¹ According to the description of the images, there was mild contrast enhancement, which suggests inflammation or hyperemia. We should be told how myositis, another complication of SARS-CoV-2 vaccination, had been ruled out. Myositis may present with similar clinical findings as in the index patient myositis can also go along with muscle swelling.

A further argument against rhabdomyolysis is that it is usually associated with fatigue, sore muscles, fever, changes of the urine color, which can become dark brown (cola-colored), and elevated myoglobin in the serum and urine. We should be informed whether other symptoms than myalgia and swelling were reported and whether myoglobin was elevated in the serum or urine.

A limitation of the study is that the therapeutic management and the outcome were not provided. We should know if the patient required analgesics, diuretics, or dialysis. We should also be informed whether the patient survived without deficits or did not recover completely. Were ever steroids given after diagnosing rhabdomyolysis? Was ever a muscle biopsy considered?

There is also no explanation provided why it took 10 days until muscle damage manifested clinically. We should know if the immune response also manifested in organs other than the muscle and if a similar delay was found as in the index patient.

Overall, the interesting study has limitations that call the results and their interpretation into question. Clarifying these weaknesses would strengthen the conclusions and could improve the study. What is announced in the title or the aims should also be included in the study. Before diagnosing SARS-CoV-2 vaccination-related rhabdomyolysis, alternative causes of the imaging abnormalities should be considered and appropriately ruled out.

Ethical Approval

Ethics approval was in accordance with ethical guidelines. The study was approved by the institutional review board. Consent to participate was obtained from the

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patient. Consent for publication was obtained from the patient.

Availability of Data

All data are available from the corresponding author.

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Conflict of Interest

None declared.

Author Contributions

J.F. was involved in designing, literature search, discussion, first draft, critical comments, and final approval. F.A.S. contributed to literature search, discussion, critical comments, and final approval. A.-C.G.A. contributed to conceptualization of the study, along with literature search, proof reading, and final approval.

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