European Journal of Case Reports in Internal Medicine

Rhabdomyolysis Following Administration of Comirnaty®

Catarina Elias[1], Pedro Cardoso[2], Diana Gonçalves[3], Inês Vaz[4], Leila Cardoso[1]
[1] Serviço de Medicina Interna, Centro Hospitalar Universitário São João, Porto, Portugal
[2] Serviço de Gastrenterologia, Centro Hospitalar Universitário São João, Porto, Portugal
[3] Serviço de Imunohemoterapia, Centro Hospitalar Universitário São João, Porto, Portugal
[4] Unidade de Farmacovigilância do Porto, Faculdade de Medicina da Universidade do Porto, Porto, Portugal

Doi: 10.12890/2021_002796- European Journal of Case Reports in Internal Medicine - © EFIM 2021

Received: 23/07/2021
Accepted: 13/08/2021
Published: 30/08/2021

How to cite this article: Elias C, Cardoso P, Gonçalves D, Vaz I, Cardoso L. Rhabdomyolysis following administraton of Cominrnaty®? *EJCRIM* 2021;**8**: doi:10.12890/2021_002796.

Conflicts of Interests: The authors declare there are no competing interests.

ABSTRACT

Introduction: Vaccination against COVID-19 is essential to control the pandemic. The vaccines developed so far have good safety profiles but full knowledge of adverse effects will only be acquired with time and through case reports.

Case Description: We present the case of a man admitted with rhabdomyolysis 3 days after receiving his first dose of the Pfizer coronavirus vaccine Comirnaty® Other traumatic, infectious, endocrine, electrolyte disturbance and autoimmune causes of rhabdomyolysis were excluded. The temporal relationship between vaccine administration and disease onset indicated possible causality. The patient had a favourable evolution after receiving fluids and completely recovered. To our knowledge, there have been only 69 reports of rhabdomyolysis following Comirnaty® administration in Europe, as stated by the European Medicines Agency, and this is the first case report in Portugal.

Discussion: When a patient presents with rhabdomyolysis without an obvious traumatic or exertional cause, other aetiologies need to be excluded. Drug use is one of the most common causes of rhabdomyolysis in adults.

Conclusion: We present a case compatible with an adverse effect of Comirnaty® in order to raise awareness of this condition in vaccinated patients.

LEARNING POINTS

- Rhabdomyolysis is frequently due to pharmacological causes.
- COVID-19 vaccines are safe but their adverse effects have not yet been fully elucidated and more case reporting would be beneficial.
- Rhabdomyolysis secondary to administration the Pfizer anti-COVID-19 vaccine Comirnaty® can be a severe adverse effect and should be considered in the relevant clinical scenario.

KEYWORDS

Rhabdomyolysis, vaccination, COVID-19, Comirnaty®

INTRODUCTION

Vaccination against COVID-19 is essential to control the pandemic that has changed the world. As with any new medication, the full spectrum of associated adverse effects of the vaccines will only be known after they have been used for some time, and with the help of case reports. We present a case report of a probable adverse effect of the Pfizer coronavirus vaccine Comirnaty®.

European Journal of Case Reports in Internal Medicine

CASE DESCRIPTION

An 81-year-old man who had fallen was brought to the emergency department after having been found conscious and coherent but unable to move due to generalized weakness. He had fallen because of weakness of his lower limbs and denied loss of consciousness or other symptoms at the time of the fall.

He had a history of ischaemic heart disease with known left bundle branch block, cerebrovascular disease and idiopathic pulmonary fibrosis medicated with nintedanib, which he had started the month before. Three days previously he had received his first dose of Comirnaty®.

Upon arrival, he was haemodynamically stable, apyretic, and had no neurological deficits. A cerebral CT scan ruled out stroke or other cerebral lesions. His laboratory results showed rhabdomyolysis: creatinine kinase (CK) was 7799 U/l, myoglobin was over 12,000 ng/ml, high-sensitivity troponin was 1512 ng/ml, without thoracic pain or anginous equivalents, and he presented acute kidney injury (AKI): 1.67 mg/dl creatinine and 63 mg/dl urea. He was admitted to an intermediate care unit for surveillance and treatment.

Clinical evolution was optimal, with normalization of CK (the maximum value was 17,000 U/l) and myoglobin, and resolution of AKI with intense fluid therapy. Troponin normalized, telemetry never showed any arrhythmic events, and the echocardiogram did not reveal any segmental motility changes suggesting myocardial infarction (troponin elevation seemed to be related to the rhabdomyolysis). A thorough study was conducted: inflammatory myopathies and autoimmune conditions were excluded, thyroid function was normal, there were no electrolyte imbalances, no symptoms suggestive of convulsive crisis at the time of the fall or during his hospital stay, and no symptoms or analytical changes suggestive of infection. The patient had recently started nintedanib, had received Comirnaty® a few days previously, and was chronically medicated with atorvastatin 40 mg. Nintedanib was maintained during the hospital stay and did not affect the good evolution, so it was very unlikely to be the cause of the rhabdomyolysis; the same is true for the statin. It should be highlighted that the patient was not medicated with anti-psychotic drugs that could have triggered a malignant neuroleptic syndrome.

The clinical case was discussed with the multidisciplinary team and a decision was made to report this as an adverse effect of Comirnaty® and assume an association between the two.

DISCUSSION

Rhabdomyolysis can have traumatic or non-traumatic causes. The latter are divided into post-exertional causes and non-exertional causes[1]. Our patient had no history of trauma or exertion. The main aetiologies in other cases are drugs, toxins, infections, electrolyte disorders, endocrine disorders, inflammatory myopathies and genetic metabolic defects[1, 2].

Our patient had no contact with toxins and other reasons were excluded or deemed unlikely, namely genetic causes, since the rhabdomyolysis resolved with appropriate treatment and the patient's CK and myoglobin values were not previously abnormal. Therefore, the most likely aetiology was rhabdomyolysis secondary to drug administration (one of the most common aetiologies in adults). Despite treatment with more than one medication that could be associated with rhabdomyolysis, the temporal relationship favoured a connection with the vaccine Comirnaty®.

We contacted the Pharmacovigilance Department of our city. This is the first case in Portugal and, in Europe, there are only 69 reports of this adverse effect, according to the European Medicines Agency. To our knowledge, there has been only one published case report so far of a similar event which occurred in the USA in a younger patient with a different clinical presentation[3]. We understand that the workload imposed by the pandemic might be delaying similar reports, or, perhaps, that this is a rare adverse effect. Importantly, while myalgia is noted, rhabdomyolysis is not currently mentioned in the summary of product characteristics[4]. Consequently, we hope our report will help raise awareness of this condition, and contribute to the evidence on this probable adverse effect[3].

CONCLUSION

Our case strengthens this new association, highlighting possible causality. We hope we have helped to widen the adverse effect profile of this vaccine, and raise awareness of an adverse effect that should be considered in the relevant clinical setting.

REFERENCES

1. Torres PA, Helmstetter JA, Kaye AM, Kaye AD. Rhabdomyolysis: pathogenesis, diagnosis, and treatment. *Ochsner J* 2015;**15**:58–69.
2. Nance JR, Mammen AL. Diagnostic evaluation of rhabdomyolysis. *Muscle Nerve* 2015;**51**:793–810.
3. Nassar M, Chung H, Dhayaparan Y, Nyein A, Acevedo BJ, Chicos C, et al. COVID-19 vaccine induced rhabdomyolysis: case report with literature review. *Diabetes Metab Syndr* 2021;**15**:102170.
4. European Medicines Agency. Comirnaty: EPAR – Product Information [Internet]. 2021. https://www.ema.europa.eu/en/documents/product-information/comirnaty-epar-product-information_en.pdf (accessed 20 July 2021).