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Letter to the Editor

A case of myocarditis and isolated hypotassemia after Biontech-Pfizer vaccine for Covid-19



Prevention of Covid-19 with vaccination is essential as the pandemic left a severe psychosocial and economical impact worldwide. The BioNTechPfizer vaccine has caused much controversy among general public because of its' relatively unknown mRNA technology. However, the vaccine has proven to be effective in preventing Covid-19 and is used in many countries. A case of myocarditis and isolated hypotassemia after a BioNTech-Pfizer vaccination with the patient's informed consent is presented here.

57-year-old female patient has been on sertraline 50 mg/day and venlafaxine 37.5 mg/day for Major Depressive Disorder for the last ten years. She received the second shot of Biontech-Pfizer vaccine 39 days after the first shot. Two days after the second shot of Biontech-Pfizer vaccine for Covid-19, she experienced vertigo and fell on the floor. She visited her psychiatrist four days after the vaccine with symptoms of extreme fatigue. She went through a detailed physical and neurological examination, but there was no pathological sign. All the biochemical parameters, including liver and kidney function tests and troponin T levels (Troponin T hs: 0.003 mg/ml), were in the normal range except the following: potassium: 2.6 mmol/L (3.5–5.1), CRP: 25.7 mg/L (0–6), CK-MB: 41.3 U/L (0–25). These tests were repeated three days later, and all the parameters (CK-MB: 16.0 U/L, potassium: 3.8 mmol/L) except CRP (28.1) returned to normal levels. She received 2.172 g potassium citrate and 2.00 g potassium bicarbonate orally for 3 days after which the potassium level increased to 3.8 mmol/L. Cardiology examination confirmed a diagnosis of myocarditis. She received no treatment for the myocarditis. Echocardiography revealed mild left ventricular diastolic dysfunction. The cardiac stress test was regular. Her symptoms resolved completely in ten days.

Marshall et al. (2021) published a case series of seven male patients between 14 and 19 years of age who developed myocarditis after the Biontech-Pfizer vaccine [1]. The myocarditis improved in a few days, like in our case. As reported by the Centers for Disease Control and Prevention (CDC), myocarditis after the BioNtech-Pfizer Covid-19 vaccine is more common among males [2]. The 69-year-old fulminant myocarditis case that Gauchotte et al. (2021) reported had previous ischemic heart disease history [3]. The myocarditis in this case resolved without further complications.

Besides myocarditis, there was hypotassemia in the case. There are reports of nephropathy related to both the Covid-19 infection and the BioNtechPfizer vaccine [4,5]. Even though there was no clinical sign or biochemical finding regarding nephropathy, as BUN and creatinine were in the normal range, hypotassemia

in the reported case may be the result of a quickly resolved mild nephropathy. Previous researchers had not reported hypotassemia in nephropathy cases. This might be because the hypotassemia have resolved before it was measured. In this case, it is possible that there was renal tubular pathology in the form of acute tubular injury which resulted in hypotassemia without further progression.

This might be the first reported middle-aged female case of myocarditis and isolated hypotassemia after the BioNTechPfizer vaccine. Fatigue and vestibular dysfunction symptoms might be mistaken for the somatic symptoms of depressive disorder or as a psychosomatic response to vaccination. In cases where extreme fatigue or cardiac symptoms like tachycardia or faintness are observed after the BioNTechPfizer vaccine, cardiovascular pathology must be ruled out with general biochemical workup.

Informed consent

The described case in the letter gave a written informed consent for publication regarding her medical condition to the first author who is the treating psychiatrist of her.

Contributions

MEC: Psychiatrist of the patient who suspected a possible role of BioNtech-Pfizer vaccine and who followed-up the clinical condition.

BÖÜ: Did literature research for the letter.

AD: Wrote the rough draft of the letter.

FDKY: Did the English translation of the letter.

AE: Gave the final shape of the manuscript.

HZC: Examined the writing of case from internal medicine perspective.

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Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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