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CASE REPORT

A Rare Case of Delirium after Johnson and Johnson's Janssen's Vaccination

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Abstract

The SARS-Cov pandemic has impacted our world in unprecedented ways. There is a full spectrum of asymptomatic patients to those who debilitate significantly and culminate in death. The current medical literature has been expanding as we are understanding the repercussions of this novel virus; however, there is no significant data regarding potential side effects of receiving the COVID vaccination in elderly individuals. Our case describes a patient who developed transient delirium from the vaccination. Currently, there is limited data in the medical literature. Our aim is to increase awareness in the medical community to make an informed benefits to risks analysis in patients who plan to receive the Johnson & Jonson's Jansen vaccination.

Keywords

COVID, Vaccine, Side effects, Delirium

Introduction

The coronavirus pandemic caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-Cov-2) has brought up an unprecedented amount of deaths and comorbidities to those who have survived such disease.

According to a study done by Lancet, which examined 733 out of 2469 discharged patients with COVID, 63% reported fatigue or muscle weakness, 26% reported sleeping difficulties, 23% reported anxiety or depression 3 months after being discharged from the hospital [1]. Public health officials and organizations have worked together to provide means for enhancing primary prevention in patient who are at risk. Different vaccines have been developed recently, including Pfizer, Moderna, Johnson & Johnson's Jansen and others which are still in development. While the CDC reports most common side effects include local symptoms such as arm pain, redness and swelling on the injection site and systemic symptoms such as fatigue, headache, myalgias, fevers, chills, nausea or even syncope [2], there is limited amount of information on medical literature regarding critical side effects from COVID vaccinations. In this report, we examine the rare case of vaccination-induced delirium from Johnson & Johnson Janssen's COVID vaccine.

Case Report

Our patient is a 92-year-old Female with past medical history of hypertension, severe hearing impairment, atrial fibrillation, iron deficiency anemia, who came to our hospital after becoming severely weak with altered mental status. As per family members, she received Johnson & Johnson's Jansen vaccination a day prior to arrival. On the night before admission, our patient became agitated and hypoxic. Patient's son took an oximetry reading at home which ranged in the 80-85% at room air. At baseline, patient was able to communicate properly and walk with assistance. In the ED, patient was non-verbal and bedbound. Initial evaluation

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revealed patient was febrile at 102.1F, tachycardic at 118 bpm, hypoxic with SpO2 of 93% at room air, blood pressure was 115/54 mmHg and respiratory rate was 19 breaths per minute. An electrocardiogram showed atrial fibrillation with a heart rate of 109 beats per minute. Lab work revealed leukocytosis of 19,000/uL, low Hemoglobin of 10g/dL, an elevated Erythrocyte Sedimentation rate of 40mm/hr, quantitative D-dimer of 538ng/mL, venous blood gas lactate of 1.7 mmol/L, procalcitonin of 0.12ng/mL, troponin I was undetectable. Urinalysis revealed no leukocyte esterase and urine white blood cell count of 7/hpf. A SARS-CoV-2 Polymerase chain reaction taken from a nasopharyngeal specimen was negative. A chest X-ray revealed chronic interstitial changes with no focal consolidation or pleural effusion. A CT angiogram was unremarkable and excluded pulmonary embolus. An abdominal and pelvic CT scan revealed no acute abdominopelvic pathology. Patient was given 2L of intravenous lactated ringer's solution, placed on 2L of continuous oxygen nasal cannula and admitted for further evaluation. On hospital day #1, patient received Metoprolol Tartrate 25 mg which normalized her tachycardia, we resumed her home medication ferrous sulfate 324 mg for iron deficiency anemia. For her chronic hypertension, we resumed her home medication Lisinopril 10mg daily. For fever, patient received Acetaminophen 650 mg every 6 hours as needed. Her fever resolved after 1 dose of Acetaminophen 650 mg to 98.3F. Her blood work revealed improved WBC at 13,300/uL. Her oxygen saturation improved to 97% on 2L oxygen nasal cannula. Patient was lethargic with no signs of agitation; however, she became agitated on the first night of hospitalization by removing her IV lines and attempting to leave her hospital room. After communicating with the patient, she was unable to follow commands or understand her clinical status and the decision to place her on soft limb restraints was made. On hospital day #2, the patient was easily arousable to tactile stimuli but non-verbal. Her WBC decreased to 10,100/uL. Blood and urine cultures results were both negative. Physical therapy evaluated out patient, and she was able to ambulate out of bed with assistance. She continued her scheduled medications; she was able to eat hospital's food and no signs of distress were noted throughout the day. At the end of hospital day #2, patient was able to nod or shake her head when asked questions. The decision to remove soft limb restrains was made at this point. On hospital day #3, patient's WBC normalized to 7,300uL. She was able to perform activities of daily living including hair combing, eating, and ambulating at her baseline. Her oxygen nasal cannula was removed, and her oxygen saturation remained consistently > 95% at room air. The rest of her vital signs remained stable and she was eventually discharged home with physical therapy services as outpatient.

Discussion

Delirium is a syndrome is a common condition in elderly patients [3] and it is defined as the Manual of Mental Disorders as a significant decline of cognition (attention and awareness) from a previous level in one or more cognitive domains which is not explained by another mental disorder and occurs in acute settings (from hours to days) [4]. It is thought to be due by a physiologic organic brain disorder affecting consciousness, cognition, and attention [5]. These physiologic changes may be secondary to a disease process such as hypoxia or infection, intoxication/withdrawal from medications or illicit drug use or any other factors affecting an individual's health such as poor nutrition, pain, prolonged immobilization [6]. Its diagnosis may be challenging as symptoms may overlap with other psychiatric conditions [7]. Thus, it is important to establish baseline cognition in every patient who may be at risk of developing delirium. During the admission process, our patient was unable to articulate, but her history of present illness was given by her caregiver, who stated that our patient was able to listen with a hearing device, articulate needs and ambulate with assistance. Our patient developed delirium prior to her arrival to the emergency department and recovered back to her baseline mental status over three days with only supportive management, while diagnostic tests excluded infectious etiologies, stroke and metabolic causes for the altered mental status. The patient's presenting hypoxia was also a considerable concern, given that the patient's oxygen requirements increased after receiving the vaccine. But it is important to disprove hypoxia as a source of delirium, as the patient's mental status did not improve immediately after receiving supplemental oxygen and required days of oxygen before returning to her baseline mental status. Initially, our medical team suspected an underlying infectious process given the elevated white blood cell count and fever on admission, which met 2 criterion of systemic inflammatory response syndrome; however, her leukocytosis resolved spontaneously in a period of 48 hours, her fever resolved after one administration of Tylenol 650mg and her hypoxia resolved after 2 days of oxygen therapy. Imaging and microbiology studies were unremarkable, thus, excluding other potential etiologies of our patient's delirium and making J & J vaccination as the most likely etiology of her presentation.

On a statement released by the pharmaceutical company Johnson and Johnson on October 12th, 2020, the pharmaceutical company momentarily paused their COVID vaccination phase III clinical trials due to unexplained and undisclosed illnesses among participants [8]. Trials were then resumed after an independent Data Safety and Monitoring Board's reviewed the case of 1 study participant who experienced a serious medical event of no clear identifiable cause [9].

There has been a previous case report documenting an episode of acute delirium in an elderly patient who received the Pfizer BNT162b2 vaccine. This patient presented to an outpatient facility with 24-hours of confusion after receiving the vaccine and was given Quetiapine prior to complete resolution of symptoms after 48 hours [10]. Another documented case report of acute delirium was documented in an elderly patient who received the Corona vaccination [11]. Both cases presented acute delirium in elderly patients after receiving COVID vaccinations with complete resolution of delirium and return to baseline after conservative management.

Conclusions

Adverse effects of vaccines must be documented to raise awareness to the medical community and continue discovering side effects in predisposed individuals; however, given the morbidity and mortality of the coronavirus pandemic, and the success in disease prevention and decreased hospitalizations, the benefits of the coronavirus vaccine may outweigh the potential risks. The current consensus in the medical community still recommend for widespread vaccination; however; further research is recommended to fully understand the spectrum of side effects from COVID vaccinations.

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