

Adrenal crisis after COVID-19 vaccination in patient with hypopituitarism

Nikolina Markovic¹, Anila Faizan², Eshen Rao², Chirag Boradia²

¹ Department of Medicine, Rutgers New Jersey Medical School, Newark, NJ, United States

² Department of Medicine, Saint Barnabas Medical Center, Livingston, NJ, United States

Introduction

Adrenal crisis (AC) is acute life-threatening condition that can occur in patients with adrenal insufficiency (AI) after exposure to infection, surgery, strenuous physical or psychological stress.¹ Vaccination with Tdap, influenza and pneumococcal vaccine is reported as a cause of AC.² Our objective is to present a novel case of AC precipitated by COVID-19 vaccination.

Case Presentation

A 74-year-old male with medical history significant for prolactinoma with surgical resection and subsequent hypopituitarism on replacement therapy (compliant with medications) presented with altered mental status and fever. Two days before presentation, the patient received the second dose of COVID-19 vaccine at 1pm and within hours he experienced lethargy and confusion. The next day, he was unable to converse, was more somnolent, and sleeping for more than 24 hours. EMS was called, and the patient was found to have blood glucose of 20 mg/dL and myosis and was treated with IV dextrose and naloxone without improvement in mentation. On arrival to ED he was only responsive to painful stimuli, febrile to 103.5 F, tachycardic to 105 beats/minute and blood pressure was 145/84 mmHg which subsequently decreased to 107/71 mmHg. Workup revealed serum blood glucose of 143 mg/dl, random cortisol level of 1.91 µg/dl, TSH of 0.006 UIU/mL and free T4 1.90 ng/dL. Urinary toxicology screen was negative and blood alcohol level was undetectable. Head computer tomography (CT), CT angiography and lumbar puncture with cerebrospinal fluid analysis were negative for central nervous system (CNS) pathology. As structural and infection CNS causes were excluded stress dose of steroids was started. After 24h of stress dose of hydrocortisone 50 mg every 6 hours patient had significant improvement in mental status. Patient was diagnosed with AC precipitated by immunization with COVID-19 vaccine.

Discussion

Common precipitators of AC are gastroenteritis, infections, surgical procedures without adequate steroid coverage, emotional stress¹ and vaccination.² Infection is one of leading cause of AC and adequate immunization in patients with chronic AI is crucial.² Except for report of adrenal crisis after administration of Tdap, pneumococcal and influenza vaccine² there are no recommendations of prevention of AC before immunization and incidence of vaccinations being precipitator of AC is unknown.

Conclusion

This is a first case of AC secondary to COVID-19 vaccine. Better understanding and guidance for prevention of AC prior to COVID-19 vaccination are needed for safe immunization of patients with hypopituitarism.

References

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