SEVERE ADVERSE EVENT POST-YELLOW FEVER VACCINE IN A PATIENT WITH ANTI-IFN TYPE I AUTOANTIBODIES: A CASE REPORT

Debora Marques Veghini^{1,*}, Pietra Zava Lorencini¹, Ketty Lysie Libardi Lira Machado¹, Alexandra Mendes Tonaco Flores Pinto¹, Kaicki Teófilo da Silva¹, Raiza Cansian Tuão¹, Barbara Ferraço Dalmasso¹, Gustavo Pinto de Oliveira Gomes¹, Anna Carolina Simões Moulin¹, Luiza Lorenzoni Grillo¹, Lidia Balarini da Silva¹, Estephania Pignaton Naseri¹, Valeria Valim¹

1.Universidade Federal do Espírito Santo, Vitória (ES), Brazil.

*Corresponding author: debora.veghini@hotmail.com

BACKGROUND

The yellow fever is a viral disease transmitted by hematophagous mosquitoes of the family Culicidae. Yellow fever virus live attenuated vaccine is the only form of protection, but it has specific recommendations for immunosuppressed patients. Individuals with autoantibodies to type 1 interferons (IFNs) are more susceptible to viral diseases. Also, IFNs are related to physiopathology of autoimmune diseases. We report a case of a patient with anti-type I IFN antibodies with severe reaction to the yellow fever vaccine, and late evolution to autoimmune disease.

CASE REPORT

A 51-year-old-patient was vaccinated with the yellow fever virus vaccine in March 2017. Three days after the vaccination, she developed fever, headache and myalgia. She went to the emergency room on the sixth day after vaccination, referring fever, hyporexia, diarrhea, asthenia and headache and was treated for symptoms. After 10 days, she was hospitalized due to reduced level of consciousness, low blood pressure, conjunctival hyperemia, jaundice and metabolic acidosis. Subsequently, evolved with diffuse rash, bleeding lesions in mouth, arthritis in hands and wrists, melena, acute kidney injury, liver failure and global tetraparesis, with rapid deterioration of clinical condition. She was hospitalized for 39 days and was discharged after the resolution of symptoms. One sample was sent by Fundação Oswaldo Cruz to the Laboratoire de Génétique Humaine des Maladies Infectieuses (Université Paris Descartes) and neutralizing autoantibodies against type 1 IFNs were detected, which explains the severe reaction to yellow fever vaccine. After 2 years, referred arthralgia, alopecia and diffuse myalgia. Schirmer test was performed (right eye 2 mm and left eye 3 mm), and laboratory exams showed positive Anti-Ro, polyclonal hypergammaglobulinemia and complement decrease, which confirmed Sjögren's syndrome diagnosis. She also presented arthritis, myalgia, fatigue, alopecia, skin lesions, complement consumption, antinuclear antibody > 1/640 nuclear large speckled pattern and positive Anti-Sm, fulfilling criteria for systemic lupus erythematosus (SLE) EULAR/ACR classification. Patient is in continuous use of hydroxychloroquine, azathioprine and lubricating eye drops, with remission of SLE and Sjögren's syndrome.

CONCLUSION

Restrictions of the attenuated virus vaccines are of great clinical importance, since immunosuppressed patients are more susceptible to present severe complications. In this report, we presented a rare case of a patient with antibodies against type I IFN who had severe reaction to yellow fever virus vaccine, and developed SLE and Sjögren's syndrome years after primary vaccination. Therefore, it is worth investigating rare immunodeficiencies, such as the presence of autoantibodies anti IFN, in patients with severe reactions postvaccine.

KEYWORDS

Anti-IFN type I autoantibodies, Yellow fever virus vaccine, Autoimmune disease.