COVID VACCINATION ASSOCIATED ACQUIRED THROMBOTIC THROMBOCYTOPENIC PURPURA

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INTRODUCTION

Thrombotic thrombocytopenic purpura (TTP) was originally defined pathologically as a systemic disease with widespread VWF-platelet thrombi in the arterioles and capillaries of multiple organs. VWF-platelet thrombi result from a disintegrin and metalloproteinase with a thrombospondin type 1 motif, member 13 (ADAMTS13) deficiency. Autoimmune inhibitors against ADAMTS-13 account for most of the cases and are known as acquired TTP. Immune and autoimmune vaccination-related adverse events following the immunization (AEFIs) of the most commonly administered COVID-19 vaccines include neurological ones, myocarditis, and immune thrombotic thrombocytopenia / vaccine-induced prothrombotic immune thrombotic thrombocytopenia. We present a COVID-19 vaccination-associated TTP in this abstract.

CASE

A 40-year-old woman with no known history of the disease was referred to a community hospital due to weakness, chills, and macroscopic hematuria after the first dose of the Biontech vaccine on December 12, 2021. Hemoglobin: 8.5g/dl, platelet: 8000/mm3, LDH:1262 U/L, creatinine:0.90 mg/dl, ferritin: 882 , iron: 155, total bilirubin: 2,29 mg/dl, direct Coombs test was negative, haptoglobin:3. The patient was referred to the hematology department with a prediagnosis of TTP. The patient was hospitalized in our hematology service with the diagnosis of TTP with the observation of platelet anisocytosis. Hemoglobin 7gr/dl, MCV 86 fl, platelet 11000 /mm3, INR 1.07 total bilirubin 1.38 mg/dl, direct bilirubin 0.41 mg/dl, creatinine 0.76 mg/dl, LDH 922 U/l was observed in the admission blood tests.

Physical examination revealed localized purpura in the extremities and abdomen. After a citrated blood sample was taken for ADAMTS-13 test, he underwent plasmapheresis with 12 Units of fresh frozen plasma. Prednisolone as 80 mg per day was started. Platelets increased to 57000 /mm3 after the first plasmapheresis. Since the platelet count was 92000 /mm3 after the 6th plasmapheresis, the patient was planned to be given 4 doses of Rituximab for 700 mg once a week. After the ninth time of plasmapheresis, the patient's platelet level reached 171000 /mm3. After receiving the last doses of Rituximab, the patient's platelet level increased to 332000 /mm3. During this period, deep vein thrombosis was detected on doppler ultrasonography performed due to left leg pain, and enoxaparin 0.8 ml BID was started. The patient developed a headache and no findings in favor of ischemia, thrombosis, or bleeding were detected in neurological imaging studies. The hypertensive patient's headache regressed when his blood pressure was controlled with antihypertensives. ADAMTS-13 activity 12.51, ADAMTS-13 Antigen 0.08, ADAMTS-13 inhibitor 25.51. The patient was diagnosed with acquired thrombotic thrombocytopenia and discharged with the recommendation of close follow-up. Changes of the platelet, hemoglobin, and LDH levels are shown in Figure 1.

RESULTS

The Covid 19 pandemic has caused millions of deaths all over the world. The most important way to protect against the pandemic is vaccination. Vaccines are known to have some serious side effects, albeit rare. However, these side effects are negligible compared to the fatal impact of COVID-19 infection and vaccination should be encouraged.

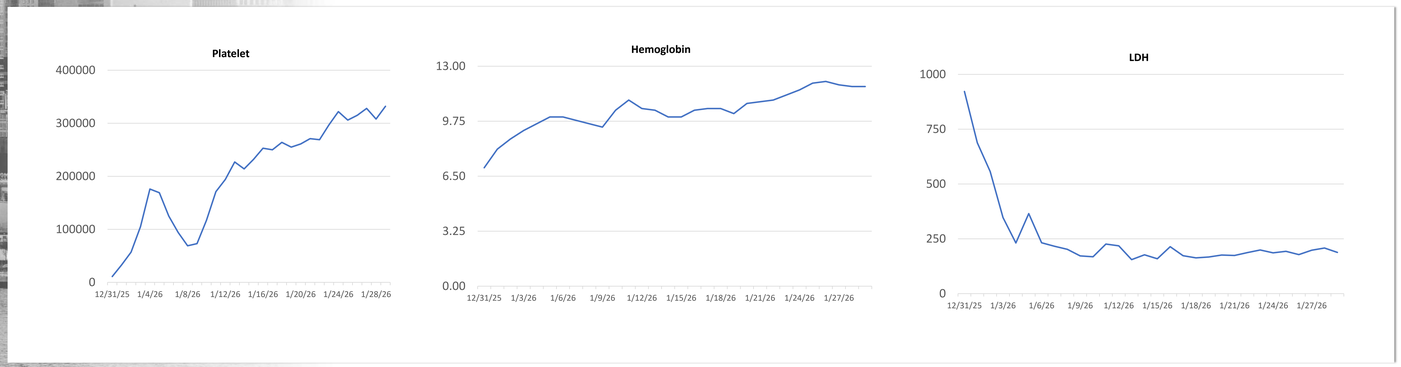


Figure 1. Changes in the platelet, hemoglobin, and LDH levels.