The 65th ASH Annual Meeting Abstracts

ONLINE PUBLICATION ONLY

311.DISORDERS OF PLATELET NUMBER OR FUNCTION: CLINICAL AND EPIDEMIOLOGICAL

Eculizumab As a Treatment for Gemcitabine Induced Thrombotic Microangiopathy: A Case Report of Partial Response in a Patient with Pancreatic Adenocarcinoma

Aatif Khurshid, MD [1], *Rathnamitreyee Vegunta, MD* [1], *Amir Steinberg, MD* [1,2]

[1] Westchester Medical Center, Valhalla, NY
[2] New York Medical College, Valhalla, NY

Background: Thrombotic microangiopathies (TMAs) involve microvascular platelet thrombi occlusion, often manifesting in dangerous high mortality outcomes. Gemcitabine induced thrombotic microangiopathy, a type of drug induced microangiopathy (DITMA), is an exceedingly rare presentation, currently with no established treatment protocol. The fundamental approach to treatment involves cessation of gemcitabine along with supportive measures. The presentation and pathophysiology of DITMA can be similar to not only Thrombotic Thrombocytopenia Purpura (TTP) but also atypical Hemolytic Uremic Syndrome (aHUS). Therefore, plasmapheresis or anticomplement therapy with eculizumab have been utilized in clinical practice to address potential ADAMTS13 deficiency or complement mediated processes respectively.

Case Presentation: A 74-year-old woman with a history of pancreatic adenocarcinoma on gemcitabine (cycle 5 of 6) and autoimmune hepatitis presented from her rehabilitation facility for lethargy, bilateral upper and lower extremity swelling and low platelets. Her labs on presentation were hemoglobin 7.5 g/dL, platelets 39 k/mm3, lactate dehydrogenase (LDH) 1281 U/L, corrected reticulocyte count 2.6% and creatinine 1.53 mg/dL. The peripheral smear was notable for schistocytes. A diagnosis of gemcitabine induced TMA was highest on the differential. The decision was made to initiate weekly eculizumab immediately. Within two days of administrating the first dose of eculizumab the platelet count increased to 67 k/mm3. In terms of further work up, the direct antiglobulin testing was negative and the ADAMTS13 antibody was within normal limits. The LDH, which was above normal in this patient at baseline due to her autoimmune hepatitis, remained elevated throughout her hospital stay. While her platelets and hemoglobin responded appropriately to eculizumab, her renal function continued to deteriorate. She required an ICU stay due to respiratory distress in the setting of volume overload, which necessitated dialysis. Eventually, she developed septic shock. She ultimately passed away on day 18 of her hospital stay, having received 3 total doses of eculizumab.

Conclusion: Gemcitabine induced TMA is a rare presentation with no overall standard approach, aside from chemotherapy cessation and supportive measures. Literature on this topic has been limited to case reports. Our case is unique in the approach we utilized based on some of the existing literature. While our treatment approach of weekly eculizumab in suspected gemcitabine induced TMA has been done before, to our knowledge this has typically been done after attempted plasmapheresis. On the other hand, our approach involved immediately starting eculizumab without plasmapheresis due to high suspicion of gemcitabine induced TMA, with TTP eventually being ruled out by the normal ADAMTS13 antibody. We also appreciated an immediate response to the treatment with increased platelets that remained stable, while the renal function did not respond to the treatment. Overall, this case adds to the discussion regarding whether eculizumab can be a promising treatment option for patients with this rare presentation of drug induced TMA in patients with active malignancy undergoing chemotherapy.

Disclosures Steinberg: *Jazz Pharmaceuticals:* Speakers Bureau; *MorphoSys:* Membership on an entity's Board of Directors or advisory committees.