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CD30-Positive, EBV-Positive T-cell Lymphoma Associated with Chronic Active EBV Infection: Successful Treatment with Brentuximab Vedotin

Sarah E. Mc Dermott
CMH, semcdermott@cmh.edu

Research Abstract Title

Submitting/Presenting Author (must be a trainee): Sarah Mc Dermott DO
Primary Email Address: semcdermott@cmh.edu

X Fellow

Primary Mentor (one name only): Dr. Keith August
Other authors/contributors involved in project: Dr. Rakesh Goyal, Dr. Alexander Kats

IRB Number: Not applicable

Describe role of Submitting/Presenting Trainee in this project (limit 150 words): I did not participate in the care of this patient. Her course as described below, took place before I arrived at CMH.

Background, Objectives/Goal, Methods/Design, Results, Conclusions limited to 500 words

Background:
Chronic active Epstein-Barr virus (CAEBV) is a rare disease where infection with the EBV-virus is inadequately controlled by the host immune system leading to circulating EBV DNA and infiltration of organs by EBV-positive lymphocytes. Disease manifestations include fever, lymphadenopathy, splenomegaly, hepatitis and pancytopenia. In the absence of effective therapy, progressive disease results in opportunistic infections, hemophagocytosis, multiorgan failure or EBV-positive lymphomas. Allogeneic hematopoietic stem cell transplantation (HSCT) is recognized as the only curative therapy.

Objectives/Goal:
To illustrate a rare case of CD30+ T-cell lymphoma in a patient with CAEBV following allogenic HSCT.

Methods/Design:
Case Report

Results:
A previously healthy 9 year old female initially presented with daily fevers, sore throat, fatigue, and weight loss. She was subsequently diagnosed with CAEBV based on the presence of circulating EBV DNA and evidence of EBV positive lymphoproliferation seen on biopsies of the appendix and an inguinal lymph node. She received treatment with a matched sibling donor allogeneic HSCT. Despite having undetectable circulating EBV DNA at the time of transplant, circulating EBV DNA reappeared only 10 days after transplant and she received two infusions of donor derived EBV directed cytotoxic T-lymphocytes on days 40 and 54 post-HSCT. Five months after HSCT, she developed a 2 cm exophytic lesion inside the right upper lip. Biopsy of the lesion demonstrated a CD30+, EBV+ T-cell lymphoma. Immunohistochemistry was negative for ALK. A PET scan demonstrated uptake in the right upper lip

with no other areas of increased FDG uptake. Local treatment was not considered to be a reasonable option due to its location as well as concern that this could represent systemic disease in the setting of significant immunosuppression. Treatment with brentuximab vedotin was started at a dose of 1.8 mg/m^2/dose administered every 3 weeks. She had rapid resolution of the lesion after the first dose. She received a total of eight doses of brentuximab vedotin, requiring a dose reduction to 1.2 mg/m^2/dose after the fifth dose due to peripheral neuropathy. She is currently 18 months from the completion of brentuximab with no recurrence of CD30+ lymphoproliferation.

Conclusions:

EBV-positive lymphoma is a known complication of CAEBV infection. In this rare case of CAEBV complicated by CD30+ T-cell lymphoma, brentuximab vedotin led to a rapid and sustained response with manageable toxicity.