***Case report***

**EPSTEIN – BARR VIRUS INFECTION DISGUISED AS ACUTE LEUKEMIA: A CASE REPORT**

ABSTRACT:

Epstein Barr virus (EBV), the most prevalent viruses known to infect humans belongs to the herpes family. The genome of the EBV is the first human herpes virus to be fully sequenced. Infectious mononucleosis is a condition that commonly occurs in adulthood presenting with symptoms such as fever, sore throat and generalized lymphadenopathy. Here we present a case in which an infection was disguised as leukemia due to similar presentation of the disease thus, emphasizing the need for proper history to be taken in all patients. A 16-year-old female was admitted with complaints of fever-evening rise of temperature, cough with expectoration, loss of appetite and generalized tiredness for few days. On admission, the general physical examination revealed mild pallor,leucocytosis, elevated LDH and deranged LFT. Based on her symptoms and elevated total count she was suspected of ALL.In view of leucocytosis and presence of atypical cells in peripheral smear oncology consultation was sought in order to rule out acute lymphocytic leukemia. Her acute leukemia comprehensive panel revealed no blast cells and predominant T cell population seen. IgM anti-viral capsid antigen for EBV was positive (18.70). The patient was managed conservatively. Her WBC counts came down with decrease in the percentage of atypical cells in peripheral smear and downward trend of LDH.The patient was followed up in the outpatient department after one week and had regression of lymph node enlargement as well as normalization of WBC counts. It is essential to get the complete history of the patients to all possible exposures of infection and to include EBV-associated syndromes in differential diagnosis. A Thorough evaluation must be conducted to avoid mistakenly diagnosing the patient with lymphoproliferative neoplasms.

Keywords: Epstein Barr virus (EBV), Infectious mononucleosis, leucocytosis.

INTRODUCTION:

Epstein Barr virus (EBV), the most prevalent viruses known to infect humans belongs to the herpes family. Though less than 1% of cases result in serious consequences, the infection usually resolves on its own and seldom causes harmful side effects (1).

The genome of the Epstein-Barr virus is the first human herpes virus to be fully sequenced. From benign infectious mononucleosis to malignant nasopharyngeal carcinoma, Burkitt's lymphoma, and primary CNS lymphoma in AIDS patients, it is linked to a wide range of illnesses.

Infectious mononucleosis is a condition that commonly occurs in adulthood presenting with symptoms such as fever, sore throat and generalized lymphadenopathy(1). Here we present a case in which an infection was disguised as leukemia due to similar presentation of the disease thus, emphasizing the need for proper history to be taken in all patients.

CASE HISTORY:

A 16-year-old female was admitted with complaints of fever-evening rise of temperature, cough with expectoration, loss of appetite and generalized tiredness for few days. She also had lower respiratory tract infection a few days back and was treated symptomatically for the same. On admission, the general physical examination revealed mild pallor. Her blood investigation showed leucocytosis, elevated LDH and deranged LFT. Her WBC=21820, ALT =167, AST=168, LDH =562 on admission. CRP was negative. Urine and blood culture were sterile. Bilateral cervical and right axillary lymph node enlargement was seen. Monospot -infectious mononucleosis, widal and all viral markers were negative. Her peripheral blood smear revealed hypochromic microcytic anemia, moderate leucocytosis with lymphocytosis,10 % of atypical cells and several reactive lymphocytes(22%). No malarial parasite seen. Based on her symptoms and elevated total count she was suspected of ALL.

In view of leucocytosis and presence of atypical cells in peripheral smear oncology consultation was sought in order to rule out acute lymphocytic leukemia. Her acute leukemia comprehensive panel revealed no blast cells and predominant T cell population seen. Bone marrow aspiration showed trilineage hematopoiesis with lymphocytosis (around 20-21%) and Bone marrow biopsy revealed showed trilineage hematopoiesis with erythroid hyperplasia.

Igm anti-viral capsid antigen for EBV was positive (18.70). The patient was managed conservatively. Her WBC counts came down with decrease in the percentage of atypical cells in peripheral smear and downward trend of LDH .The patient was followed up in the outpatient department after one week and had regression of lymph node enlargement as well as normalization of WBC counts.

DISCUSSION:

EBV is a herpes virus in which over 90% of the population worldwide has been infected. EBV infections often are associated with symptoms ranging from asymptomatic to infectious mononucleosis. (3) EBV infection present with systemic manifestations including splenomegaly, lymphadenopathy, headache, malaise, fever, and sore throat.In children these infection are often asymptomatic or present with vague symptoms and making it harder to diagnose at times.(4)Patients often experience symptoms such as fatigue as the most common lingering complaint for several months.

In a study done by Rea et al., physical exam findings such as cervical lymphadenopathy and pharyngitis, were observed even at six months after the initial infection in about one-fourth of the study group(n=140). The most common Lab abnormalities included lymphocytosis, with a presence of atypical lymphocytes, and most cases also showed abnormally elevated liver function tests(5).

Lympho-proliferative diseases are a close mimicker of EBV associated syndromes, as the primary target of this virus are B cells but it also leads to proliferation of T cells as well. To get definite diagnosis of EBV-associated illnesses, there are variety of techniques required, such as peripheral smear examination, viral serologic markers, PCR detection of viral DNA, and careful flow cytometry interpretation(2).

Epstein Barr virus often requires only symptomatic treatment with medications that can reduce fever and pain. It's difficult to maintain adequate nutrition, because many patients have anorexia during first two weeks of their illness,and they find it difficult to eat.Some studies found that while antiviral medications did lessen the amount of virus secreted in the mouth, overall symptoms remained same(6).

CONCLUSION:

Epstein-Some studies found that while antiviral medications did lessen the amount of virus secreted in the mouth, overall symptoms remained same.Barr virus infections are often presented with symptoms that resemble haematological malignancies. It is essential to get the complete history of the patients to all possible exposures of infection and to include EBV-associated syndromes in differential diagnosis. A Thorough evaluation must be conducted to avoid mistakenly diagnosing the patient with lympho proliferative neoplasms.

ETHICAL APPROVAL AND PATIENT CONSENT:

The authors have taken written consent from the patient to conduct the study

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