

CASE REPORT

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# Disseminated fusariosis and endogenous fungal endophthalmitis in acute lymphoblastic leukemia following platelet transfusion possibly due to transfusion-related immunomodulation

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## Abstract

**Background:** To report a case of disseminated fusariosis with endogenous endophthalmitis in a patient with acute lymphoblastic leukemia. Transfusion-associated immune modulation secondary to platelet transfusion could play an important role in the pathophysiology of this case.

**Case Presentation:** A 9 year-old male with acute lymphoblastic leukemia complicated by pancytopenia and disseminated Intravascular coagulation was given platelet transfusion. He developed disseminated fusariosis and was referred to the ophthalmology team for right endogenous endophthalmitis. The infection was controlled with aggressive systemic and intravitreal antifungals.

**Conclusion:** Patients with acute lymphoblastic leukemia are predisposed to endogenous fungal endophthalmitis. Transfusion-associated immune modulation may further increase host susceptibility to such opportunistic infections.

## Background

Endogenous fungal endophthalmitis is a serious sight threatening condition, occur mostly in immunocompromised patients. Patients with acute lymphoblastic leukemia require aggressive polychemotherapy with high risk of bone marrow suppression. Frequent transfusion of blood product may result in transfusion-associated immune modulation (TRIM) which further increases host susceptibility to opportunistic infection. TRIMs are mostly associated with the transfusion of allogenic white blood cells. We report a case of disseminated fusariosis and endogenous fungal endophthalmitis in a patient with acute lymphoblastic leukemia (ALL) after platelet transfusion.

## Case Presentation

A 9 year old male was diagnosed of precursor B-CALLA positive ALL in December 2006, and was on

maintenance therapy since February 2007. He had testicular relapse in June 2009 and central nervous system (CNS) involvement in March 2010. He was treated according to ALL R3 protocol phase III intensification which consist intravenous vincristine 1.5 mg, intravenous cytarabine 3,000 mg/m<sup>2</sup> and intrathecal methotrexate 12 mg.

In June 2010, he developed pancytopenia with low grade fever (37-38 degree Celsius). Haemoglobin was 8.7 g/dL, red cell count  $3.18 \times 10^{12}/L$ , white cell count  $0.2 \times 10^9/L$  and platelet count  $19 \times 10^9/L$ .

The Disseminated Intra-Vascular Coagulation (DIVC) screening test was positive; Prothrombin time (PT) 16.9 seconds, International Normalized Ratio (INR) 1.42, Activated Partial Thromboplastin Time (APTT) 67.8 seconds, APTT ratio 1.75, fibrinogen level 8.79 g/dL and D-Dimer 2.67 ug/ml. The patient was given urgent transfusion of irradiated apheresis platelet, fresh frozen plasma and cryoprecipitate.

Within 48 hour of platelet transfusion, the patient developed generalized tender, papular rash. The rash was initially thought to be of viral origin. Skin biopsy revealed dermis infiltration by septated, non-pigmented

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