ImageTJH-2016-0447.R1
Submitted: 14 November 2016
Accepted: 9 February 2017

Title: **Leukemic phase of CD5+ diffuse large B cell lymphoma**

Hui-Hua Hsiao[1,2], Hui-Ching Wang[1], Yu-Fen Tsai[1], Chien Hsiao[1], Shih-Feng Cho[1], Yi-Chang Liu[1,2], Sheng-Fung Lin[1,2], Ta-Chih Liu[1,2]

[1]Division of Hematology-Oncology, Department of Internal Medicine; and [2]Faculty of Medicine, College of Medicine, Kaohsiung Medical University, Kaohsiung, Taiwan
Corresponding author: Dr. Hui-Hua Hsiao, E-mail: huhuhs@cc.kmu.edu.tw

Key words: lymphoma, acute leukemia, flowcytometry

Conflict of interest: no

Acute lymphoid leukemia and diffuse large B cell lymphoma, though are categorizied in lymphoid neoplasms, have different clinical presentation, treatment protocol and outcomes. However, the rare situation of leukemic phase of CD5+ diffuse large B cell lymphoma sometimes mimics acute lymphoid leukemia and requires careful differentiation. We reported here a rapid and accurate diagnosis from flow-cytometry.

A 55-year-old lady suffered from hemoptysis and thrombocytopenia with lymphadenopathies. Complete blood revealed a white cell count of 10.2 X 10^9/l with 46% of blast cells. Peripheral blood smear showed marked blastocytosis with fine nuclear chromatin and prominent nucleioli and scanty cytoplasma (figure1 left). Flow-cytometry showed positive results for CD5, CD19, CD20 and Kappa light chain; but negative for CD7, CD10, CD11b, CD13, CD33, CD34, CD56 and TdT. Bone marrow examination revealed scattered involvement of CD20-positive, TdT-negative cells (figure 1 and figure 2). Biopsy of neck lymph nodes confirmed the diagnosis of CD5+ diffuse large B cell lymphoma (figure 2 lower right). Under the impression of stage IV disease, she received 8 courses of R-CHOP therapy with stem cell transplant later on. She had complete response after therapy for 2 years to now.

A leukemia phase of diffuse large B cell lymphoma is rare and mimics acute lymphoblastic leukemia [1,2]. Flow-cytometry with an appropriate panel could help in differentiating lymphoma from leukemia [2,3].In this case, having surface light chain and TdT makers made an accurate and rapid diagnosis.

References

1. Wong E, Juneja S. Diffuse large B-cell lymphoma in leukemic phase with flower

cell morphology. Blood. 2014:123:3378.
2. Hazarika B. Diffuse large B-cell lymphoma in leukemic phase. Blood 2014;123:2159.
3. MaeshimaAM, Taniquchi H, Tanioka K, Kitahara H, Miyamoto K, Fukuhara S, Munakata W, Suzuki T, Maruyama D, Kobayashi Y, Tobinai K, Kushima R. Clinicopathological characteristics of follicular lymphoma with peripheral blood involvement. Leuk Lymphoma 2014;14:1-5.

Figure legend

Figure 1. Peripheral blood smear showed thrombocytopenia with marked lymphoid blast-like cells of fine nuclear chromatin with prominent nucleioli and scanty cytoplasma (A, H&E stain, x1000)(up left). Bone marrow examination revealed scattered involvement of median to large cells with prominent nucleioli (B, H&E stain, x1000) (up right).

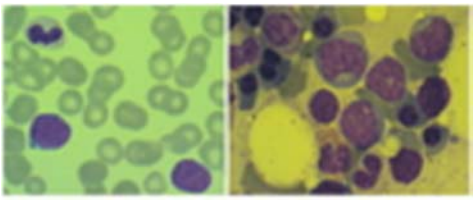

Figure 2. Flow-cytometry revealed positive of CD5, CD20 with negative of TdT (upper and lower left). Lymph node biopsy showed diffuse lymphoma pattern with positive of CD20 (lower right).