was also negative for any atypical cells. He was treated with the GMALL protocol [1]. Interim PET was consistent with complete response after four cycles of the regimen (Figure 1). The patient completed the rest of the regimen uneventfully and the final PET-CT did not show any residual disease or recurrence.

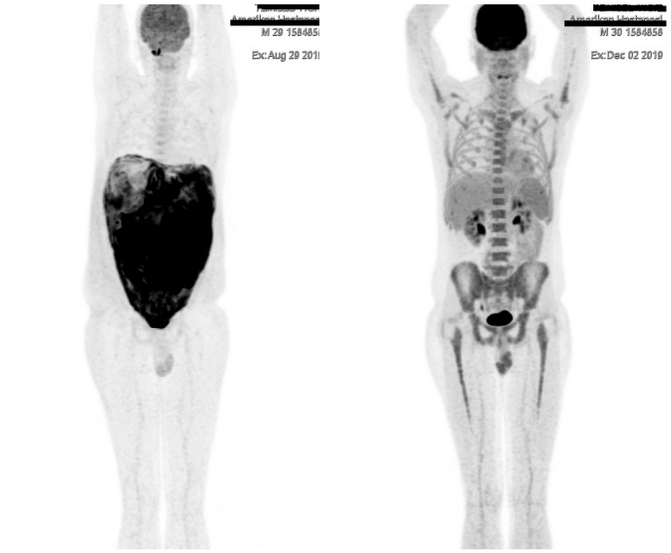

Figure 1. PET-CT before and after treatment.

PET-CT: Positron emission tomography-computed tomography

Keywords: Burkitt's lymphoma, Peritonitis carcinomatosa, PET-CT

Anahtar Sözcükler: Burkitt lenfoma, Peritonitis karsinomatoza, PET-BT

Informed Consent: Obtained.

Conflict of Interest: No conflict of interest was declared by the authors.

Financial Disclosure: The authors declared that this study received no financial support.

References

1. Pohlen M, Gerth HU, Liersch R, Koschmieder S, Mesters RM, Kessler T, Appelmann I, Müller-Tidow C, Berdel WE. Efficacy and toxicity of a rituximab and methotrexate based regimen (GMALL B-ALL/NHL 2002 protocol) in Burkitt's and primary mediastinal large B-cell lymphoma. Am J Hematol 2011;86:61-64.

©Copyright 2020 by Turkish Society of Hematology
Turkish Journal of Hematology, Published by Galenos Publishing House

Address for Correspondence/Yazışma Adresi: Deram Büyüktaş, MD, Koç University Faculty of Medicine, Department of Hematology, İstanbul, Turkey
E-mail : derambuyuktas@yahoo.com ORCID: orcid.org/0000-0002-3623-2925

Received/Geliş tarihi: January 11, 2020
Accepted/Kabul tarihi: March 16, 2020

DOI: 10.4274/tjh.galenos.2020.2020.0015

CD4+CD8+ Double-Positive T-Lymphocytes: Pitfalls

CD4+CD8+ Çift Pozitif T-Lenfositler: Tuzaklar

İrfan Yavaşoğlu

Aydın Adnan Menderes University Faculty of Medicine, Division of Hematology, Aydın, Turkey

To the Editor,

The article entitled "Percentages of CD4+CD8+ Double-positive T Lymphocytes in the Peripheral Blood of Adults from a Blood Bank in Bogotá, Colombia," written by Gonzalez-Mancera et al. [1] and published in a recent issue of your journal, was quite interesting. Herein, I wish to contribute to the article.

Nicotine has been reported to affect the cell-mediated immune system. In addition, nicotine exposure can lead to regulatory T-cell induction [2,3]. Therefore, I think that it is important to know the smoking status and also the number of lymphocytes for the subjects in Gonzalez-Mancera et al.'s [1] study. Data have been published revealing that the prevalence of monoclonal B-cell lymphocytosis is higher than previously reported in blood donors [4]. Also, the large number of monoclonal B-cell lymphocytes determines the biological fate of cells transfused in recipients [4]. The use of CD45 during gating in flow cytometry could provide accurate identification. CD3+CD16/56 is important in determining natural killer T (NKT) cells and could have identified NKT cell contamination in the study.

Zloza and Al-Harthi reported that the expression of invariant and non-invariant NKT markers was most prominent in the $CD4^{bright}CD8^{dim}$ subpopulation [5]. In one study, up to 29% of cells were found as invariant CD3+6B11+NKT cells and up to 26% as non-invariant CD3+CD16/56+NKT cells [4]. It was also stated that the combination of cell populations not sharing similar features, expressing differentiation and activation of surface markers, and not consuming contaminating cell populations such as NKT cells would mask CD4+CD8+ T-cell subpopulation analyses [5].

Keywords: CD4+CD8+ Double-positive T-lymphocytes, Pitfalls

Anahtar Sözcükler: CD4+CD8+çift pozitif T-lenfositler, Tuzaklar

Financial Disclosure: The author declared that this study received no financial support.

©Copyright 2020 by Turkish Society of Hematology
Turkish Journal of Hematology, Published by Galenos Publishing House

References

1. Gonzalez-Mancera MS, Bolaños NI, Salamanca M, Orjuela GA, Rodriguez AN, Gonzalez JM. Percentages of CD4+CD8+ double-positive T lymphocytes in the peripheral blood of adults from a blood bank in Bogotá, Colombia. Turk J Hematol 2020;37:36-41.
2. Kalra R, Singh SM, Savage G, Finch M, Sopori L. Effects of cigarette smoke on immune response: chronic exposure to cigarette smoke impairs antigen-mediated signaling in T cells and depletes IP3-sensitive Ca2+ stores. J Pharmacol Exp Ther 2000;293:166-171.
3. Menard L, Rola-Pleszcynski M. Nicotine induces T-suppressor cells: modulation by the nicotinic antagonist d-tubocurarine and myasthenic serum. Clin Immunol Immunopathol 1987;44:10-113.
4. Shim YK, Rachel JM, Ghia P, Boren J, Abbasi F, Dagklis A, Venable G, Kang J, Degheidy H, Plapp FV, Vogt RF, Menitove JE, Marti GE. Monoclonal B-cell lymphocytosis in healthy blood donors: an unexpectedly common finding. Blood 2014;123:1319-1326.
5. Zloza A, Al-Harthi L. Multiple populations of T lymphocytes are distinguished by the level of CD4 and CD8 coexpression and require individual consideration. J Leuk Biol 2006;79:4-6.

Address for Correspondence/Yazışma Adresi: İrfan Yavaşoğlu, MD, Aydın Adnan Menderes University Faculty of Medicine, Division of Hematology, Aydın, Turkey
Phone : +90 256 212 00 20
E-mail : dr_yavas@yahoo.com ORCID: orcid.org/0000-0003-1703-2175

Received/Geliş tarihi: March 30, 2020
Accepted/Kabul tarihi: April 15, 2020
DOI: 10.4274/tjh.galenos.2020.2020.0140

In Reply to: CD4+CD8+ Double-Positive T-Lymphocytes: Pitfalls

CD4+CD8+ Çift Pozitif T-Lenfositleri: Görünmez Tehlikelere Yanıt Olarak

Miguel Santiago Gonzalez-Mancera, John Mario Gonzalez

Universidad de los Andes, School of Medicine, Grupo de Ciencias Básicas Médicas, Bogotá, Colombia

To the Editor,

It was with great interest that we read the recent reply to our published article. Although the effects of nicotine on the immune response have been described in some regards, we do not know its influence on double-positive T lymphocytes (CD4+CD8+ or DPTs). Our study included volunteers from the Colombian Red Cross who underwent screening as blood donors; however, their smoking status was not evaluated [1].

In the reply to our article, it was advised that the potential phenotypic overlap of natural killer T (NKT) cells with the DPT subpopulation be studied in our cohort. It was mentioned that CD45, a well-known pan-leukocyte marker, could be a possible part of the phenotypic panel. Nonetheless, CD45 would not discriminate between different white cell lineages. NKT cells are a subpopulation of T cells expressing CD16/CD56+ that are CD4+CD8+ double-positive cells during their thymic selection [2]. Therefore, NKT cells that have prematurely escaped from the thymus could explain, to some extent, the presence of NKT double-positive cells in the peripheral blood.

Zloza et al. [3] described 6 different subpopulations of CD3+ T cells according to the intensity of CD4 and CD8 expression. In that study, they also showed the presence of invariant NKT (CD3+CD6B11+) and non-invariant NKT (CD3+CD16/56+) cells as part of DPTs, mainly in the $CD4^{bright}CD8^{dim}$ subpopulation. Interestingly, activation-induced expression of CD56 by CD8+ T cells has been described, and it is associated with a reprogramming of the cytolytic activity and cytokine secretion profile in vitro [4]. Furthermore, CD56 is expressed by CD4+ T cells under certain pathological conditions [5]. Due to the complexity of marker expression on these T cell subpopulations, it seems necessary to sort them and to study their gene expression profiles to define specific DPT subpopulations. Nonetheless, it is reasonable to consider that a low percentage of NKT cells could be present in DPTs, but the percentage should be lower than 26% [3].