HemaSphere

EHA EUROPEAN HEMATOLOGY ASSOCIATION

PB2153 SURGICAL SPECIMENS OF INDOLENT AND AGGRESSIVE B-NHLS SHOW DIFFERENCES IN THEIR FLOW-CYTOMETRY PROFILE OF PLOIDY, PROLIFERATING FRACTION AND PROPORTION OF TUMOR-ASSOCIATED MYELOID AND T-CELL SUBSETS

Topic: 20. Lymphoma Biology & Translational Research

David Azoulay[1, 2], Tal Tapuchi[2], Hector I Cohen[3], Luiza Akria[1, 2], Galia Stemer[1, 2], Ohad Ronen[4, 2]

[1] Hematology, Galilee Medical Center, Nahariya, Israel;[2] Azrieli Faculty of Medicine, Bar-Ilan University, Safed, Israel;[3] Pathology Unit and Laboratories, Galilee Medical Center, Nahariya, Israel;[4] Otolaryngology Head and Neck Surgery, Galilee Medical Center, Nahariya, Israel

Background: Multiparameter flow cytometry (FC) is an important and valuable diagnostic tool for specimens collected via minimally invasive techniques, when only a limited tissue sample is available and tissue architecture is inadequate.

Aims: Here we examined and compared the incidence of various cellular components in specimens of patients with aggressive versus indolent B-cell non-Hodgkin's lymphomas (B-NHLs).

Methods:

The data were retrospectively collected from surgical specimens collected via fine-needle aspiration or core biopsies that were submitted to our FC laboratory for a routine lymphoma diagnostic workup. The data included: ploidy status and incidences of cells in the proliferative fraction, lymphocytes, $CD64^+$ monocytes, immature (iGr) and mature granulocytes (mGr) in the total $CD45^+$ cellular component, clonal B cells, $CD3^+$ T cells, $CD3/CD56^+$ NK cells in the total lymphocyte population, $CD4^+$ T cells, $CD8^+$ T cells, $CD4^+/CD8^+$ DP T cells, $CD4^-/CD8^-$ DN T cells and $CD3^+/CD56^+$ NKT cells in the total T cell component. Pearson Chi-squared or two-sided *t* test analysis was performed to compare the profiles of specimens of patients with aggressive versus indolent B-NHLs as determined by histopathological analysis.

Results:

A total of 40 specimens were included in this study (F:M [%] 62.5:37.5, age [mean ± SD, range] 67.87 ± 14.73 years, 27.4-92.6). Histopathological analysis confirmed the diagnosis of aggressive B-NHL in 23 (20 DLBCL, 2 MCL and 1 ALC) (57.5%) specimens, and indolent B-NHL in 17 (11 FL, 6 MZL) (42.5%) specimens. Specimens from aggressive B-NHLs showed an increased rate of aneuploidy (56.52% vs. 11.76% *prob>chiSq*=0.0025), increased incidences of cells in the proliferative fraction ([mean % ± SD] 13.03 ± 10.52 vs. 3.21 ± 1.42 $p = 0.0005$), $CD64^+$ monocytes (3.89 ± 3.88 vs. 0.93 ± 0.75 $p = 0.0038$), iGr (4.43 ± 4.47 vs. 0.96 ± 0.86 $p = 0.0033$), CD8+ T cells (33.16 ± 16.23 vs. 18.54 ± 6.44 $p = 0.001$), DN T cells (6.90 ± 4.34 vs. 3.47 ± 1.74 $p = 0.004$) and DP T cells (6.74 ± 5.94 vs. 2.38 ± 1.26 $p = 0.005$), and reduced incidences of lymphocytes (72.71 ± 24.26 vs. 89.22 ± 13.33 $p = 0.016$), CD4+ and T cells (65.67 ± 15.86 vs. 78.68 ± 7.24 $p = 0.003$), as compared to specimens of indolent B-NHLs.

Summary/Conclusion:

These preliminary data confirm our previous report and suggest the proliferating fraction and the incidences of tumor-associated myeloid cells and T cells as flow cytometry-identifiable biomarkers that could assist in the differentiation between aggressive vs. indolent B-NHLs in specimens collected via minimally invasive sampling.