

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

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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 \pm SD, range] 67.87 \pm 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 % \pm SD] 13.03 \pm 10.52 vs. 3.21 \pm 1.42 *p* = 0.0005), CD64⁺ monocytes (3.89 \pm 3.88 vs. 0.93 \pm 0.75 *p* = 0.0038), iGr (4.43 \pm 4.47 vs. 0.96 \pm 0.86 *p* = 0.0033), CD8⁺ T cells (33.16 \pm 16.23 vs. 18.54 \pm 6.44 *p* = 0.001), DN T cells (6.90 \pm 4.34 vs. 3.47 \pm 1.74 *p* = 0.004) and DP T cells (6.74 \pm 5.94 vs. 2.38 \pm 1.26 *p* = 0.005), and reduced incidences of lymphocytes (72.71 \pm 24.26 vs. 89.22 \pm 13.33 *p* = 0.016), CD4⁺ and T cells (65.67 \pm 15.86 vs. 78.68 \pm 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.

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