Diffuse Large B-Cell Lymphoma With A Complex Genome Exhibit p53 But Not MYC Expression And Have Inferior Survival

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Introduction

Genomic instability in diffuse large B-cell lymphoma (DLBCL) has been shown to have a strong prognostic value in patients with diffuse large B-cell lymphoma (DLBCL) treated with rituximab-based immunohchemotherapy (RCHOP) (PMID:2297578). In that study, the presence of gains or losses at least one of the following nine genomic markers along the CDKN2A-TP53-HB-EB3 axis was used to define cases with "complex" genomic.

Materials and Methods

All studies were performed with IRB approval.

DNA was extracted from sections of formalin-fixed paraffin-embedded biopsy specimens (more than 50% tumor burden) from 85 patients diagnosed with de novo DLBCL at a single institution (PMID:24619762). DNA was submitted to array-CGH using a custom designed oligonucleotide array (Agilent Technologies) with an enumeration of normal males (Promega, as reference provided) as described in PMID:24047479. Each specimen was scored for the presence of at least 50 aberrations differing in copy number instability.

Genomic Imbalance in 85 De Novo DLBCL

- 15 (60) = 0.05 (8%)
- 21 ns
- 8 (27)
- 28 RCHOP
- A16q24.3
- P 0.010
- Loss of 16q12.2
- 17
- 15
- 15**
- of normal
- 5 (19)
- D3p14.2
- 0 Pathogenomic
- D2q24.2
- 47 Subtype (Hans)
- Variable
- 18 (31)
- 43 NA
- CLEAN = 32 (38%)
- ns Genomic complexity, as assessed by aberrations in the CDKN2A-TP53-HB-EB3 axis or number of aberrations, did not correlate with patient overall survival. Loss of 17p13.3 positively correlated with adverse survival, and appears to be another marker in addition to MYC expression in DLBCL patients with inferior survival who exhibited low p53 expression.

Conflicts of Interest

CM and JH are employees of Cancer Genetics, Inc., and are stock/stock option holders.

IS, YX, and AT have no conflicts of interest.

References

- PMID:2297578
- PMID:2491792
- PMID:24461794

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