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ORIGINAL ARTICLE

Molecular Biomarker Exploration of Rituximab plus CHOP Therapy in Real-World Diffuse Large B-Cell Lymphoma Patients

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SUMMARY

Background: **Presently, several classification methods are based on diffuse large B-cell lymphoma (DLBCL), but its clinical application has not yet been testified in Asian populations.**
Methods: **Twenty-five DLBCL patients were subjected to second-generation gene sequencing (NGS), and retrospective analysis of clinical features of the patients was to explore genotyping and survival prognosis biomarkers.**
Results: **The prevalent mutant genes in DLBCL patients cover myeloid differentiation factor 88 (MyD88) (40%), TP53 (32%), B-cell translocation gene 2 (BTG2) (28%), PIM1 (28%), and CREB-binding protein (CREBBP) (24%) in this study. The classical International Prognostic Index (IPI) scores were associated with progression-free survival (PFS) (HR: 7.52, 95% CI 1.51 - 37.6, p = 0.00393) via univariate analysis. Furthermore, patients with ETS-variant gene 6 (ETV6) (HR: 5.1, 95% CI 0.927 - 28.1, p = 0.0371), platelet-derived growth factor receptor A (*PDGFRA*) (HR: 4.29, 95% CI 0.824 - 22.3, p = 0.0594), platelet-derived growth factor receptor B (PDGFRB) (HR: 10.8, 95% CI 0.979 - 119, p = 0.0149) was distinctively correlated with poor PFS except for the IPI score. Nevertheless, the mutation of PDGFRA/B gene was not distinct in further multivariate analysis (PFS: HR: 2.72, 95% CI 0.52 - 14.23, p = 0.2369). Additionally, better survival prognosis was in DLBCL patients who did not progress within 12 months (POD12). Ultimately, caspase recruitment domain 11 (CARD11) gene mutations were enriched in patients with primary intranodal tumors, but the prognostic relevance was not discovered.**
Conclusions: **ETV6 and platelet-derived growth factor receptor (PDGFR)A/B gene mutations are supposed to be potential biomarkers for the prognosis of DLBCL patients via the statistical analysis of this small sample, and POD12 is also expected to be an effective endpoint for efficacy assessment.**
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Supplementary Data

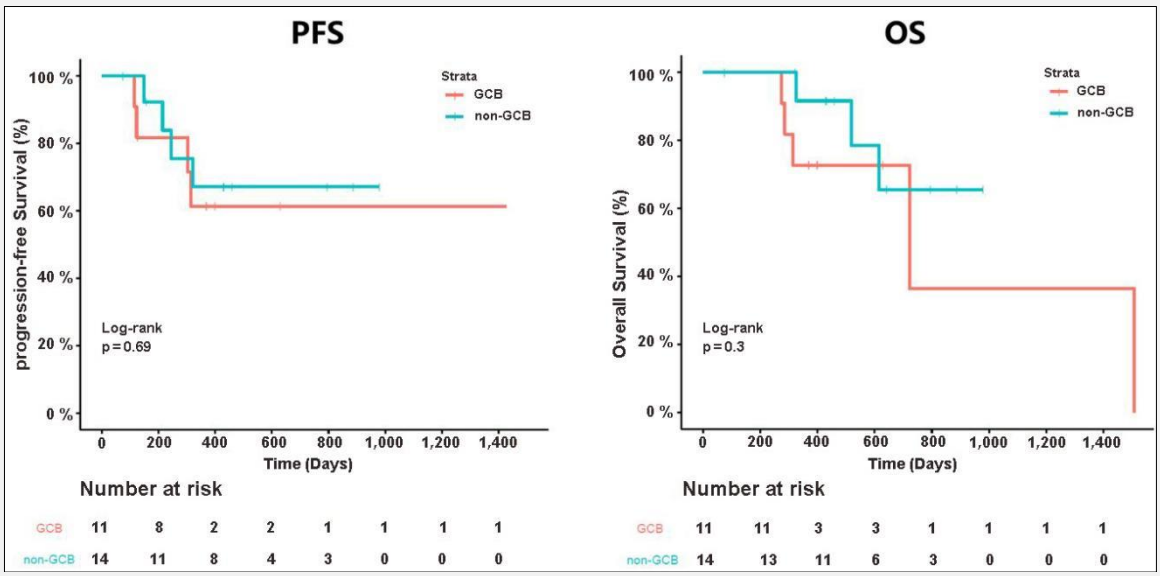

Figure S1. Kaplan-Meier survival curve of DLCBL via Hans immunohistochemical typing.

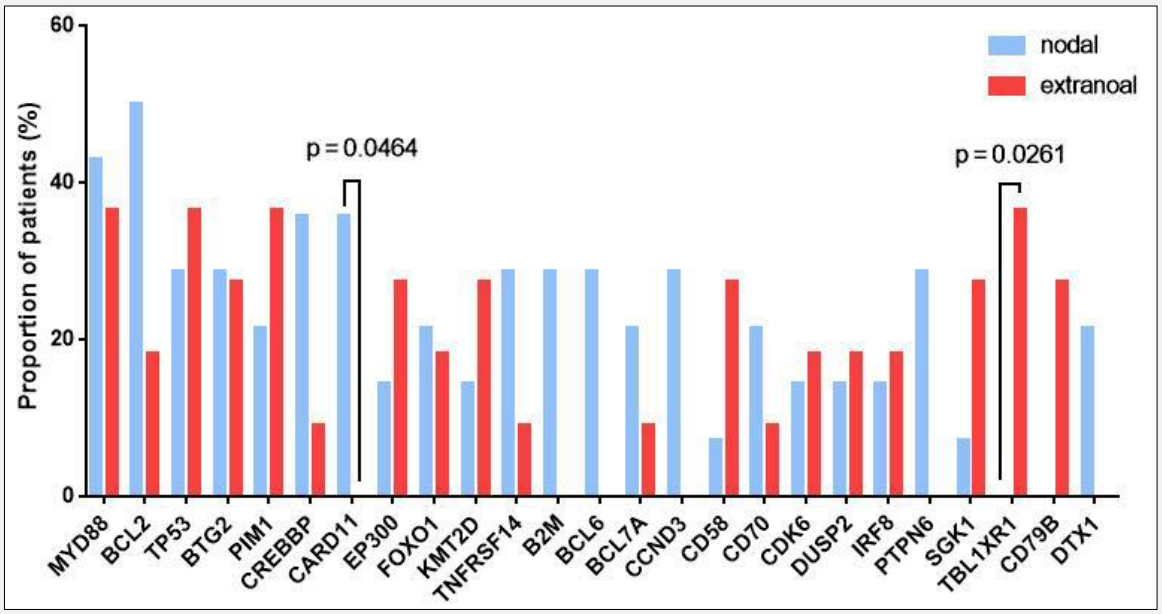

Figure S2. Differences of mutated genes between DLBCL patients in and out of primary nodes.