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Lower Survival and Increased Circulating Suppressor Cells in Patients with Relapsed/Refractory Diffuse Large B-Cell Lymphoma with Deficit of Vitamin D Levels Using R-GDP Plus Lenalidomide (R2-GDP): Results from the R2-GDP-GOTEL Trial

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Simple Summary: Diffuse large B-cell lymphoma (DLBCL) is an aggressive, heterogeneous non-Hodgkin B lymphoma, that 35% of cases produces relapsed/refractory (R/R) disease. At this point, the search of prognostic and predictive factors in DLBCL is indispensable through key biomarkers. Recently, we have found that the level of circulating MDSCs is a good marker of survival in a translational study based on the R2-GDP-GOTEL study (EudraCT Number: 2014-001620-29). Since Vitamin D is a known regulator of the immune system, we aimed to assess the evolution of circulating suppressor cells MDSCs, Tregs, and inhibited T cells in patients with deficit of vitamin D (<15 ng/mL) and sufficient levels of vitamin D (>15 ng/mL). We observed a reduction in blood suppressor cells in the group with normal vitamin D levels, but not in patients with vitamin D deficit, supporting that R2-GDP and vitamin D may have immunomodulatory functions that favors a better clinical evolution.

Abstract: The search of prognostic factors is a priority in diffuse large B-cell lymphoma (DLBCL) due to its aggressiveness. We have recently found that the level of circulating MDSCs is a good marker of survival in a translational study based on a trial (EudraCT Number: 2014-001620-29), using lenalidomide combined with R-GDP (rituximab plus gemcitabine, cisplatin, and dexamethasone). Since Vitamin D is a known immunomodulator, we have studied blood levels of these cell populations comparing patients with deficit of vitamin D levels (<15 ng/mL with those with normal levels >15 ng/mL. Mann–Whitney U test was used to compare cells distributions between groups, Wilcoxon test to compare cells distribution at different times and Spearman test to measure the association between cell populations. Patients with vitamin D deficit maintained the increased level of immune suppressor cells, whereas we observed a depletion of all immune suppressor cells in patients with normal vitamin D levels. In conclusion, we have confirmed the importance of vitamin D in the response to treatment in R/R DLBCL, suggesting that vitamin D deficit may be involved in the immune deficit of these patients, and thus, vitamin D supplementation in these patients may help to obtain a better response, warranting further investigation.