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LYMPHOCYTE PROFILING IN NEWLY DIAGNOSED MULTIPLE MYELOMA: FIRST-LINE TREATMENT WITH CYCLOPHOSPHAMIDE, THALIDOMIDE, DEXAMETHASONE, AND DARATUMUMAB

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INTRODUCTION

In the last decade, therapeutic advances have led to an increase in the overall survival of patients with multiple myeloma (MM); however, the disease remains incurable. Therapeutic protocols combining alkylating agents, immunomodulators, proteasome inhibitors, and immunotherapy induce an immunological shift that is still not fully understood.

AIM

The aim of this study was to quantify lymphocyte subpopulations and B-cell subsets in patients with newly diagnosed MM (NDMM) eligible for autologous stem cell transplant (ASCT) using first-line therapy with cyclophosphamide, thalidomide, and dexamethasone combined with daratumumab (DARA-CTd)

METHOD

23 NDMM patients had their **lymphocyte profiles analyzed** at different points: at diagnosis, after induction therapy, after 2 consolidation cycles post-ASCT, before maintenance therapy, and 1 year after the start of the maintenance phase

Flow cytometry was used to detect **lymphocyte subsets (**T, B and NK cells) and **B cell subpopulations** (naïve B cells, non-class-switched memory B cells, class-switched memory B cells, IgD-CD27 memory B cells, and plasmablasts)

RESULTS

Patients characteristics DARA-CTd	
Median age, yrs (range)	58 (37 - 67)
Gender, n (%)	
Male	10 (43)
Female	13 (57)
Ethnicity, n (%)	
Non-white	21 (87.5)
White	3 (12.5)

Table 1- Patients Characteristics of study

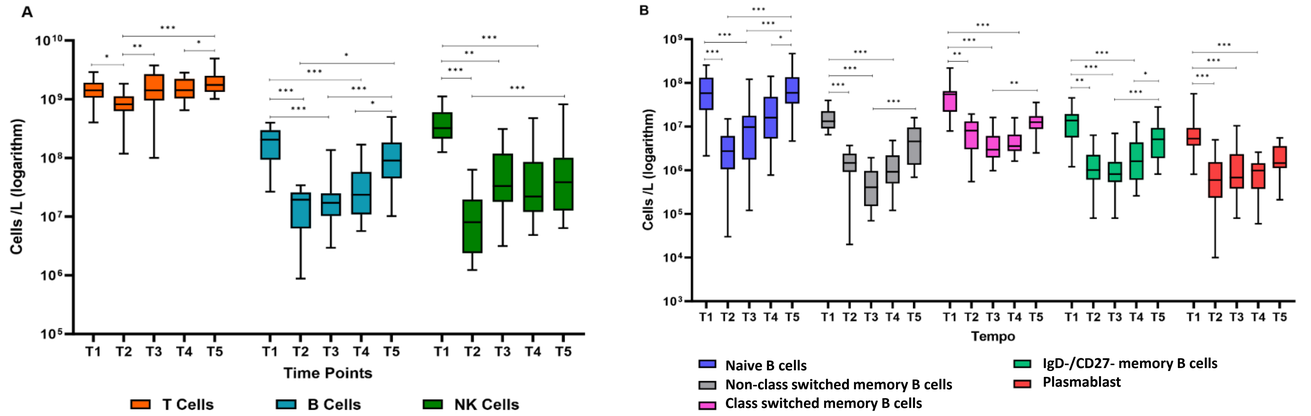


Figure 01: Characterization of the lymphocyte profile along the time points of the study.(A – B) BoxPlots present the distribution of cells in the five different time. *p<0.05 **p<0.01 ***p<0.001. Friedman's test. **T1**: at diagnosis; **T2**: after induction therapy; **T3**: after 2 consolidation cycles post-ASCT; **T4**: before maintenance therapy; **T5**: 1 year after the start of the maintenance phase.

CONCLUSIONS

The present study confirmed that Dara-CTd induced a decrease in the number of different lymphocyte populations (T, B, and NK cells) after induction therapy with Dara-CTd. The T cell number recovered after 2 consolidation cycles post-ASCT, but B and NK cells remained at low levels during 18 months of treatment with slow recovery.

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