FONDAZIONE IRCCS ISTITUTO NAZIONALE DEI TUMORI

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ANALYSIS OF POTENTIAL PROGNOSTIC FACTORS OF EFFICACY IN TISAGENLECLEUCEL TREATMENT IN A COHORT OF PATIENTS WITH DIFFUSE LARGE B-CELL LYMPHOMA

F. Chinotti, C. Lauria Pantano, M. Anghilieri, F. Guidoni, G. Cavalleris, V. Ladisa

Istituto Nazionale dei Tumori, Milano, Italy.

What was done and why

The purpose of this analysis is to evaluate the correlation between some possible predictive factors and outcome after Tisagenlecleucel infusion in patients with DLBCL.

A **retrospective observational study** was conducted on a cohort of 35 patients treated with Tisagenlecleucel from clinical practice in an Italian Oncologic Insitute from December 2019 to August 2023.

How has it done

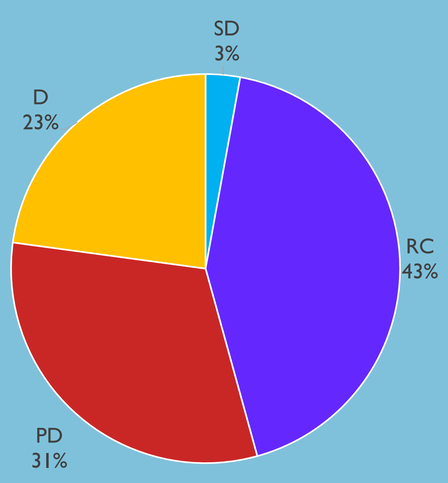
Patients were evaluated based on their response to the therapy in terms of **overall response rate** over an **18-month** period following infusion.

The analyzed factors included age, gender, development of CRS and its grade, tocilizumab administration, steroid administration, lymphocyte count at the time of leukapheresis, lymphocyte count at day 14 and day 30 post-infusion, CRP at day 0, peak of CRP within 14 days post-infusion, ferritin at day 0, peak ferritin within 14 days, previous therapy lines, previous ASCT, disease stage, bridge therapy received.

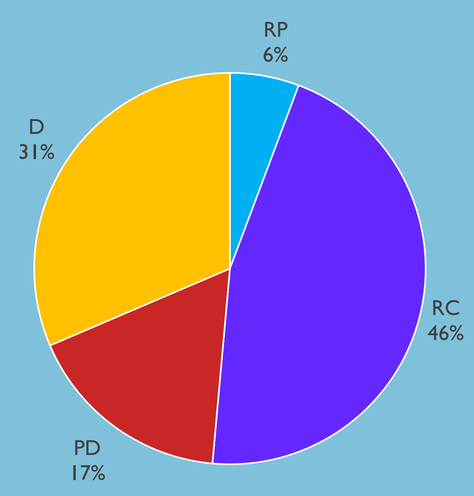
Factors that could influence response were analyzed by **stratified analysis** dividing patients into responders (complete remission, partial remission) and non responders (death and progression) at 18 months;
Mann-Whitney U test for continuous variables and Fisher's exact test for categorical variables were used; **univariate logistic regression** was used to assess the independent contribution of each factor on the probability of response to therapy. Statistical significance was considered for a value of $p<0.05$.

What was achieved

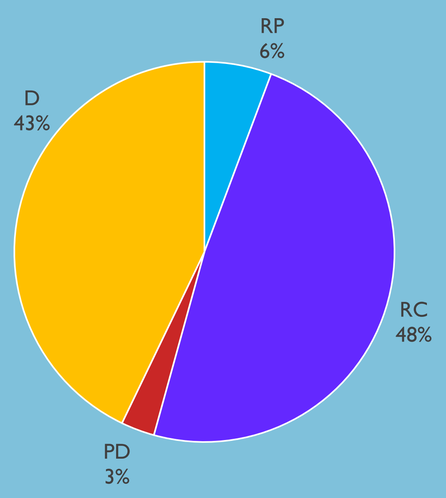
6 months



12 months



18 months



- Elevated baseline levels of CRP and ferritin increase the risk of therapy failure.
- Higher ferritin peaks within 14 days also increase the risk of failure.
- Higher lymphocyte expansion at day 30 is associated with a better response.
- Previous ASCT correlates with a better response.

What's next?

Patient's inflammatory status before therapy should be carefully evaluated: elevated levels of inflammatory markers are associated with therapy failure.
The analysis of factors that might be predictive of response to CAR-T therapy is important for a cost-effective use.

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Contact details
Federica Chinotti
federica.chinotti@istitutotumori.mi.it