



LGLBioTrack: Novel Biomarkers Tracking T-LGLL progression and treatment

Introduction

T-cell large granular lymphocytic leukemia (T-LGLL) is a rare lymphoproliferative disorder having, to date, a still unknown etiology. The diagnosis of T-LGLL is confirmed by the presence of large granular lymphocytes, phenotypically similar to terminally differentiated effector memory T cells. The clinical presentation of T-LGLL is extremely various: about one-third of patients are asymptomatic at the time of diagnosis with incidental finding of neutropenia, and with no associated symptoms or infections. On the other hand, some patients may exhibit symptoms related to neutropenia with fever due to bacterial infections, and, in serious cases, sepsis may occur.

Medical Need

Tools to predict T-LGLL patients' outcome are lacking and there is no treatment indication for asymptomatic patients. Once the diagnosis is established, asymptomatic patients are monitored for symptoms and disease progression regardless of treatment status. Therefore, there is an urgent need to find biomarkers to predict disease progression and to early identify asymptomatic patients who would benefit of a timely treatment with respect to patients which would evolve asymptotically and hence who can avoid the start of a treatment.

Solution

LGLBioTrack is an innovative method developed to predict the progression of T-LGLL based on the expression of specific biomarkers differentially expressed between symptomatic patients and asymptomatic ones. In particular, the method measures the gene CD279 and genes belonging to the Heat Shock Protein families (HSP). Preliminary results obtained from the analysis of samples from LGLL patients confirmed that HSP and CD279 genes exhibit significant higher expression in symptomatic patients and can be potential biomarkers for distinguishing symptomatic and asymptomatic LGLL patients. In conclusion, LGLBioTrack might offer new opportunities for early prediction of disease progression and novel therapeutic interventions, enhancing disease management and patient care.

Advantages

- **Early prediction** of LGLL progression and outcome;
- **Better evaluation** of medical treatment;
- Potential implication for the development of **novel targeted therapies**

Opportunity

Istituto Europeo di Oncologia is seeking **industrial partners** willing to co-develop or support further studies for the development of **LGLBioTrack** as **in vitro diagnostic tool** to predict T-LGLL progression and outcome.

Team



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Specialized Biology Assistant at IEO
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