Technology offer IP-044

Web tool to prevent or address errors in the diagnosis and prognosis of ILD

New diagnostic method based on a web tool that integrates bronchoalveolar lavage flow cytometry and patient age. This technology enables the identification and quantification of leukocyte subpopulations, activating a predictive model that stratifies risk and prognosis in interstitial lung disease (ILD). Its clinical application is useful for improving early diagnosis and guiding treatment, especially in patients with fibrosing forms, contributing to the prevention of disease progression and the reduction of mortality.

State of development

TRL-7 Real-world validation

Objective of the collaboration

License

Industrial Property

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Market needs

The diagnosis and prognosis of interstitial lung disease (ILD) remain complex due to clinical heterogeneity and the limited accuracy of current tools. Leukocyte infiltration in lung tissue plays a key role in disease progression, with lymphocytes and neutrophils exerting opposing functions in inflammatory and fibrotic processes. Dysregulation of these cell subtypes is associated with accelerated progression, poorer prognosis, and increased mortality. Current therapeutic options, such as antifibrotic agents, are more effective in the early stages, but their prescription is often delayed due to the lack of reliable biomarkers. Therefore, there is an urgent need for diagnostic and prognostic methods that enable the early identification of ILD patients and guide more effective therapeutic decisions.

Technical solution from IMIB

The tool is based on the quantification of leukocyte subpopulations from bronchoalveolar lavage using flow cytometry, targeting lymphocytes and neutrophils due to their opposing roles in ILD progression. In vitro studies have shown that the technique provides rapid and accurate results in less than one hour, allowing the identification of cell patterns characteristic of each disease subtype. In vivo models, analyzing more than 1,000 patients, have validated its prognostic capacity, establishing a score that predicts survival and robustly stratifies risk in both fibrosing and non-fibrosing ILD.

Benefits

- Results in under one hour with greater accuracy than conventional cytology.
- Validated in over 1,000 patients with a reliable prognostic model.
- Objective and reproducible cellular biomarkers.
- Reduced diagnostic delays and associated costs.