

# Characteristics of bronchoalveolar lavage findings in Post-COVID-19 pneumonia patients with persistent interstitial lung disease: prospective analysis from a dedicated outpatient setting post-hospitalization

V. Clérigo<sup>1\*</sup>, L. Fernandes<sup>1</sup>, A. Alfaiate<sup>1</sup>, D. Noivo<sup>1</sup>, P. Duarte<sup>1</sup>

<sup>1</sup> Pulmonology Department, São Bernardo Hospital, Setúbal Hospital Center, Setúbal, Portugal

\* Corresponding author: vclerigo21@gmail.com



## Background

COVID-19 is a multisystemic disease associated with a relevant symptomatic burden after acute infection. However, **newly diagnosed persistent Post-COVID-19 interstitial lung disease (ILD) data remains largely understudied after hospital discharge** in symptomatic patients.

## Objective

We aim to **evaluate the characteristics of bronchoalveolar lavage (BAL) findings in selected patients.**

## Materials and Methods

We performed a prospective observational study, according to the Consultation Protocol.

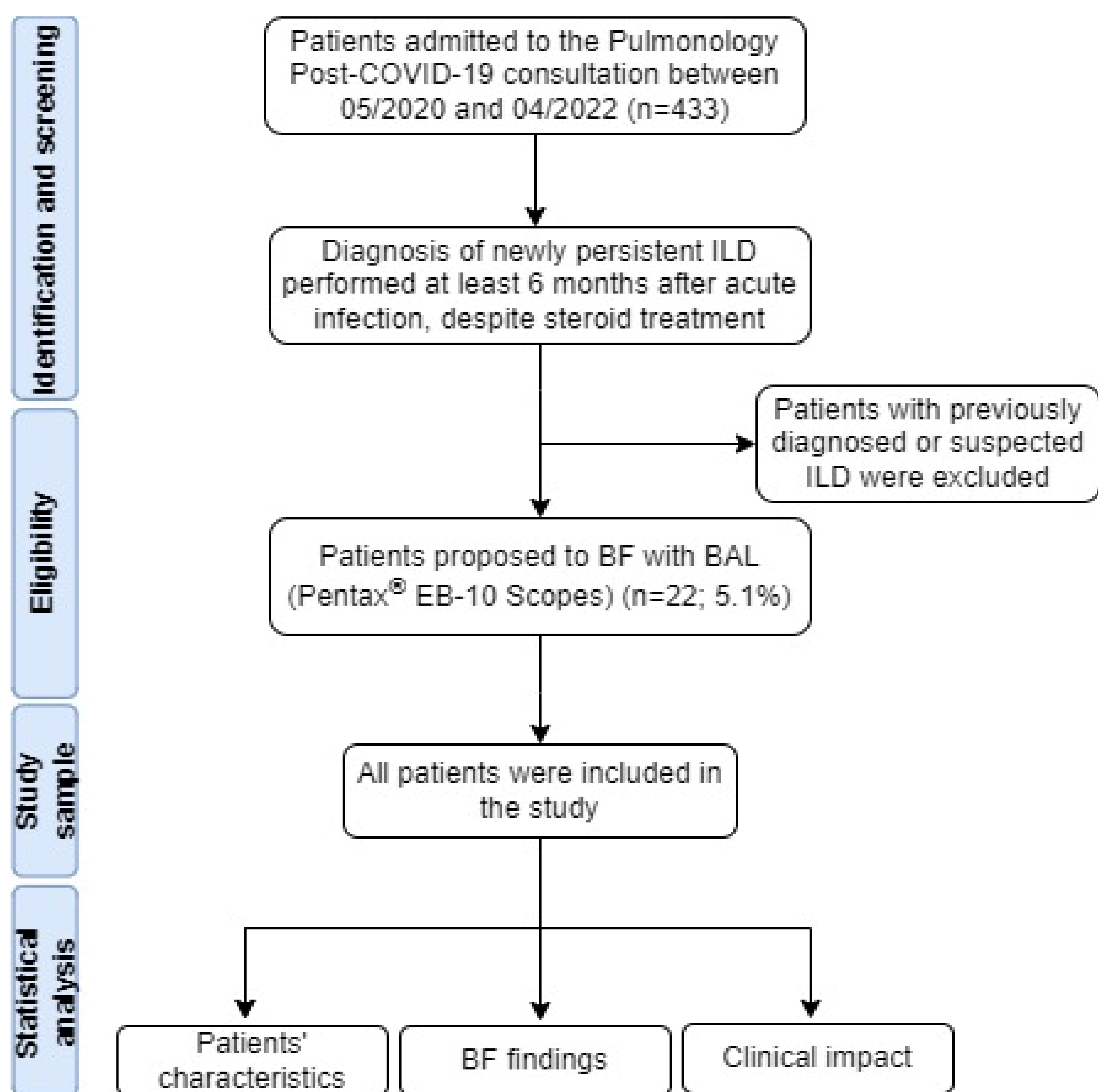


Fig. 1 Flow chart of enrolment of patients for current study

## Results

**Bronchofibroscopy (BF) pathologic findings were diagnosed in the majority of the patients (72.7%).** Median age was 63.5 years (range: 41 to 78 years) and the majority was male (54.5%). Fatigue and dyspnoea were the most common complaints. Bronchial mucosal inflammation was present in the majority of cases (54.5%). One case of lipid-laden alveolar macrophages was identified. BAL microbiological analysis revealed at least one pathogen in 3 cases (13.6%). There was no correlation between clinical symptoms, previous COVID-19 severity and BAL cellular pattern.

## Results

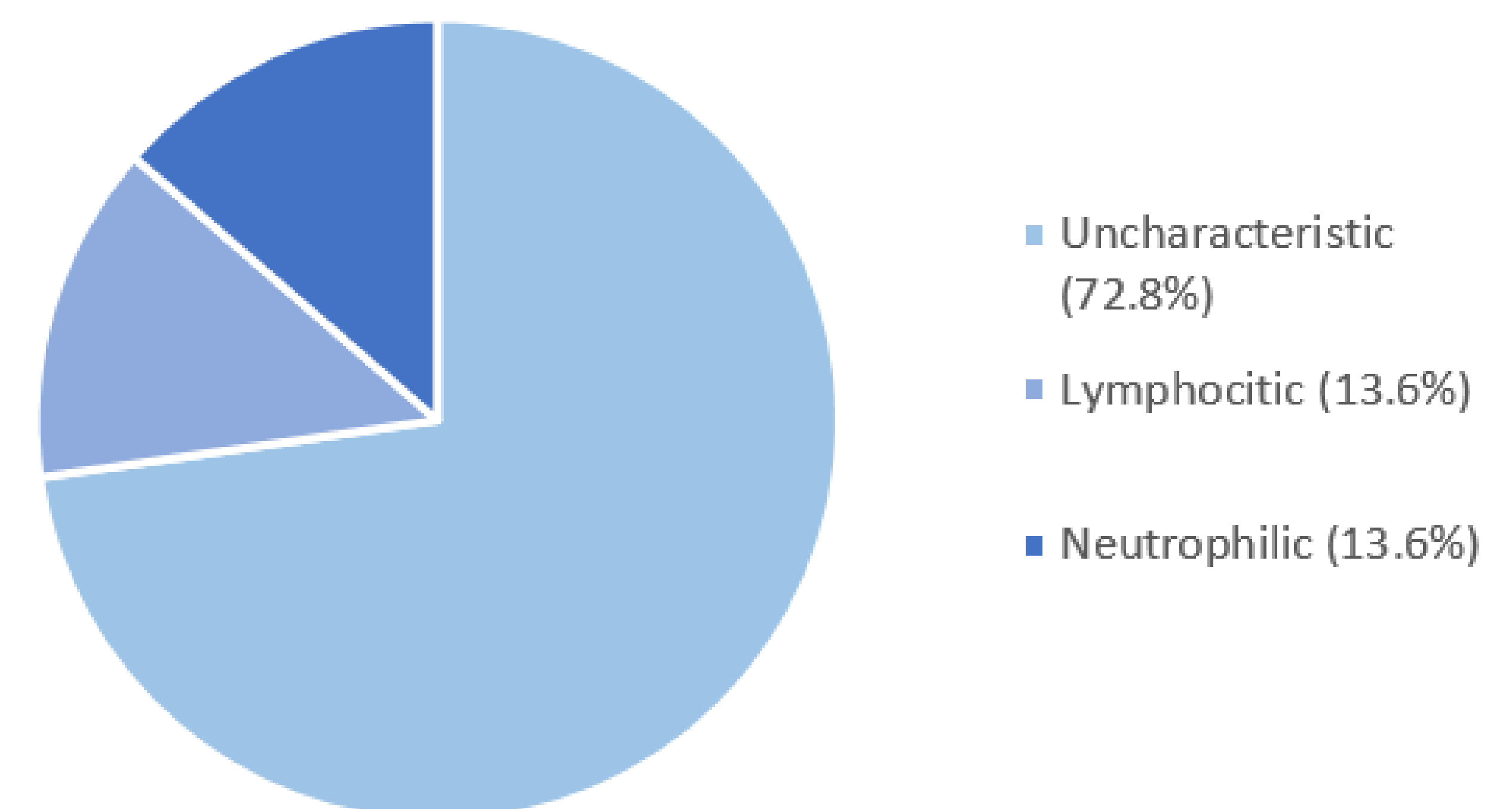


Fig. 2 Distribution of BAL predominant cellular pattern in the cohort population

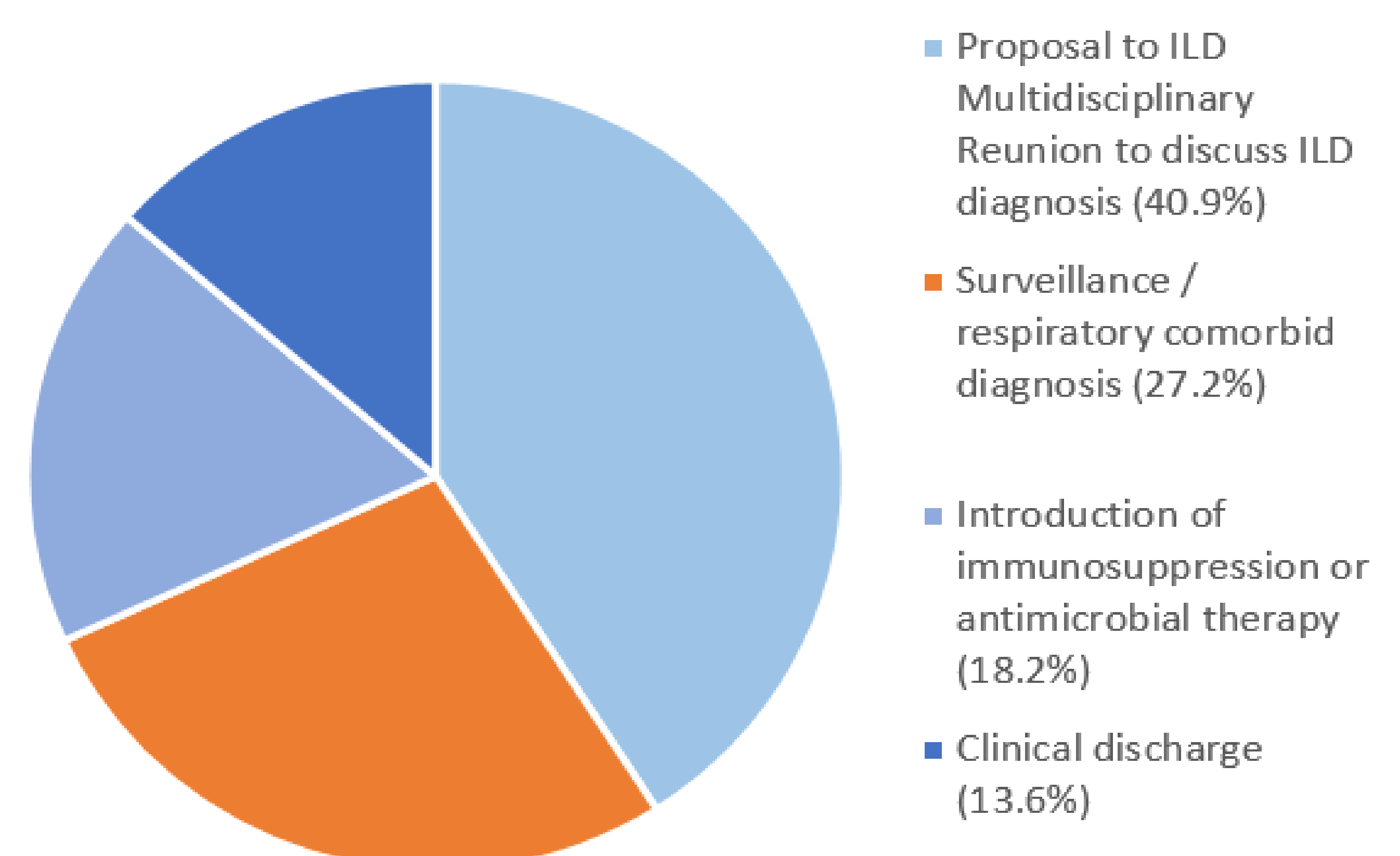


Fig. 3 Distribution of BAL impact on medical decision-making in the cohort population

## Conclusions

Our real-life data results support the **implementation of a Pulmonology Post-COVID-19 Consultation that includes use of BAL as a diagnostic complementary tool in selected patients.**

BAL had a nonegligible diagnostic yield and impact on medical decisions.

A possible **high rate of undiagnosed Post-COVID-19 ILD may be an explanation for the persistent symptomatic burden.**

This is one of the largest cohorts of COVID-19 pneumonia patients post-hospitalization in an outpatient setting submitted to BAL screening.

## Bibliography

- Myall K., Mukherjee B., Castanheira A., et al. Persistent Post-COVID-19 ILD. *Ann Am Thorac Soc.* 2021 May; 18(5).
- Wild J., Porter J., Molyneux P., et al. Understanding the burden of interstitial lung disease post-COVID-19: the UK Interstitial Lung Disease-Long COVID Study (UKILD-Long COVID). *BMJ Open Resp Res.* 2021 Sep; 8(1).
- Ambarbar, S., Hightower, S., Huprikar, N., et al. Post-COVID-19 Pulmonary Fibrosis: Novel Sequelae of the Current Pandemic. *J. Clin. Med.* 2021 Jun; 10(11).
- Pandolfi, L., Fossali, T., Frangipane, V., et al. Broncho-alveolar inflammation in COVID-19 patients: a correlation with clinical outcome. *BMC Pulm Med.* 2020 Nov; 20.