Performance and Clinical Utility of the Genomic Classifier (Envisia) for Usual Intestinal Pneumonia in Conjunction with Local Radiology


Rationale
- Usual interstitial pneumonia (UIP) is a fibrotic lung injury pattern associated with chronic fibrosing interstitial lung diseases with poor prognosis and few effective treatments.
- Current clinical evaluation often relies on imaging results, CT evidence of UIP

Methods
- Patients were allocated for this independent clinical validation from the BRAVE (Bronchial Sample Collection for a Novel Genomic Test) cohort.
- Pathologists used deep learning to derive a UIP or non-UIP reference standard for each subject.
- A single whole-transcriptome sample was generated and sequenced.
- The locked Envisia Classifier was used to designate either a molecular UIP or non-UIP call.

Results
- Local Radiology + Envisia GC had a positive predictive value of 94.7% [74.0–99.9].
- Envisia GC had a negative predictive value of 90.6% [75.0–98.0].

Conclusions
- The recognition of a UIP pattern by the Envisia Classifier on TBBx combined with HRCT and clinical factors in a multidisciplinary discussion may improve diagnostic yield and accuracy of a UIP pattern as determined by reference pathology.

Sample Collection, Processing, and Prediction from the Envisia Classifier

- After exclusions for non-diagnostic histopathology and process errors, 96 subjects remained for blinded testing against reference truth.

References

Disclosures
- The authors disclose no conflicts of interest related to the work described in this manuscript.