

CorePlus Expands Use of AI Tools to Routine Cancer Diagnosis

Back in June 2020, CorePlus Servicios Clínicos y Patológicos LLC (Carolina, Puerto Rico) became the first independent lab in the Americas to begin using AI-assisted pathology for prostate cancer diagnostics (see *LE*, October 2020). CorePlus is a CLIA-certified full-service pathology laboratory with 116 employees, including six pathologists, that process 100,000 patient accessions per year. This month we got in touch with CorePlus President Mariano de Socarraz to get an update on its expanded use of AI.



Mariano
de Socarraz

When did CorePlus transition to digital pathology?

We began validation for digitizing slides using 3DHISTECH scanners in mid-2019. And by early 2020 our pathologists were reading digitized whole slide images for all our pathology cases, including all routine histopathology and stains. Our pathologists review images and sign-out cases—either at home or the office—from Dell UltraSharp Ultrawide monitors.

And how did you get involved with AI-assisted pathology?

In mid-2020, we began using an AI algorithm developed by Israel-based Ibex Medical Analytics as a quality control check on digitized prostate tissue slides. The AI was used as a second opinion on all pathologist interpretations of prostate cases. Over the course of three years, the AI ran on approximately 10,000 prostate biopsy cases and found 74 missed cancer cases and corrected the grading on another 76 cases. This enabled these 150 patients and their doctors to develop optimal treatment plans based on accurate diagnosis.

The AI excels at finding small cancers, including perineural invasion. It has also standardized our lab's Gleason scoring for grading prostate cancer, which can vary by pathologist.

Early in 2021, we also began running the Ibex AI for quality control on our breast cancer cases. Over the course of almost three years, it ran on about 3,000 cases and found two missed cancer cases.

When did you begin applying AI at the front end to help with primary diagnosis?

CorePlus pathologists recently began using AI as a front-end tool to assist with primary diagnosis of prostate and breast tissue cases. Using heatmaps, the AI highlights cancer and other morphologic features on digitized slide images so that our pathologists can focus their time on the most challenging areas of interest.

What has been your return on investment (ROI) for digital pathology and AI?

We estimate that our pathologist's productivity has increased by 25% with improved accuracy. It's helped us eliminate false negatives, which can average 3-5% for uropathologists and 13-15% for general pathologists. This has raised professional satisfaction among our pathologists and recently helped us recruit a new pathologist.

Will you apply AI-based algorithms to other cancers?

Yes, we are planning to soon start using Ibex algorithms on the front end for gastric tissue biopsies and for HER2 immunohistochemistry scoring in breast cancer. We are also evaluating an AI tool from Techcyte for use as a quality control check to review 100% of our cervical cytology cases.

What are your thoughts on the potential for reimbursement of digital pathology and AI?

There is a very real potential for both digital pathology and AI reimbursement, but we as the digital pathology and AI community need to work on communicating the value of digital pathology and AI to payers as well as making sure that they understand the resources required to transform the practice of pathology for the benefit of patients and payers. Every new technology has to do this. Digital pathology and AI are no different.