

 PROSTATE CANCER

## Pitfalls of liquid biopsy tests

A report in *JAMA Oncology* describes the comparison of two commercial liquid biopsy tests that use cell-free DNA (cfDNA) from patients with metastatic prostate cancer. The results demonstrate low congruence between providers.

“We submitted samples from 40 men with metastatic prostate cancer to two liquid biopsy providers, which report having high sensitivity, specificity, and accuracy to detect mutations in tumour cfDNA in peripheral blood,” explains Gonzalo Torga from the James Buchanan Brady Urological Institute in Baltimore, USA, who is corresponding author of the study. “Our intention was to find the best commercial lab to test samples from patients with metastatic prostate cancer, as the technology was new and clinical data were not sufficient for us to determine which test would perform better.”

The two platforms sequence (at least in part) the coding segments of 64 genes and 73 genes, respectively, and the researchers evaluated the congruence between the 42 genes that are analysed by both providers, albeit with differing exome coverage. Of the 42 shared genes, overall 25 genes were found to be altered, most

commonly *TP53*, *ATM*, *ALK*, *BRCA1*, and *BRCA2*. Six patients had alterations in nonshared genes only. Congruence analysis for the 42 shared genes showed that results were the same between platforms for three patients with  $\geq 1$  alteration and nine patients with zero alterations (complete congruence). Six patients had partial congruence of detected alterations. However, no match between alterations in shared genes was found for 16 patients.

“Even when analysing DNA from the same blood draw, the results from the two companies rarely matched,” highlights Torga. “Oncologists should become aware of these inconsistencies, as they use liquid biopsy results to see whether a patient could respond to certain therapies or is eligible for clinical trials, and to monitor whether tumours are progressing and might require new or extra therapy. Patients could be prescribed different treatments depending on which commercial provider is used for liquid biopsy.”

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**ORIGINAL ARTICLE** Torga, G. *et al.* Patient-paired sample congruence between 2 commercial liquid biopsy tests. *JAMA Oncol.* <http://dx.doi.org/10.1001/jamaoncol.2017.4027> (2017)

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