Liquid Biopsies: Faster Results, Easier on Patients

Jean-Charles Soria, MD, PhD
Prof. of Medical Oncology
Dir. of Drug Development Dept.
Institut Gustave Roussy
Villejuif, France

H. Jack West, MD
Founder & President, GRACE
Medical Dir., Thoracic Oncology
Swedish Cancer Institute
Seattle, WA, USA

Leena Gandhi, MD, PhD
Assistant Prof. of Medicine
Dana Farber Cancer Institute
Boston, MA, USA
Dr. West: I wanted to ask one final question about, not even a specific abstract, but a theme that we saw a few abstracts about, and I believe is, arguably, going to be changing practice soon – and that is, the concept of circulating free DNA, liquid biopsies, circulating tumor cells...

Jean-Charles, I know in Europe, there is an approved test for qualifying to get EGFR-based therapy and it’s based on serum testing. I don’t know how much you’ve used it – how do you think serum testing, both for EGFR, for acquired resistance, and potentially for a broader range of things, is going to affect the field? And, I’ll ask Leena afterwards.

Dr. Soria: Well, I truly believe liquid biopsies are going to be transforming the field. I mean, getting a needle in a patient in a metastatic setting is acceptable in the front-line setting. Doing this in a sequential manner, when resistance kicks in, I mean, we do it in academic centers, but we have kind of diplomatic immunity to get those biopsies in a timely fashion.

When you are in the community practice, you’re going to lose four weeks, five weeks – if I can draw blood and get my results within one week, and it tells me, okay, you are T790M-mutant, so give it a third-generation EGFR TKI, or you have BRAF mutation. So many patients I see for second opinions, you know – if I could draw blood, as I draw blood for chemistry on platelets, that would be a fantasy. And I think it’s going to become a reality, and that reality is within our grasp, because it’s not only about mutations; translocations have been reported now by many companies, so I think this is great news for the patients.
Dr. West: And you and other people are regularly using the serum testing for EGFR, and it’s effective?

Dr. Soria: Absolutely, we are using, in fact, in our institution we’re even using a panel of 35 genes. The concordance with tissue – the sensitivity is only 60%, but the specificity is 98%. So, you know, I have a patient, if I cannot organize the biopsy, well if you can do a test for 35 actionable mutations and it comes out positive, you know it’s positive.

So, I think this is going to change a lot of things. Community doctors might not need to call Leena and send a patient to Boston, they might draw blood and, only if he has the actionable X, they’re going to call her and say, “oh, you have this fantastic trial Y, can the patient come in?” It’s going to save a lot of energy and time, and decrease frustrations.

Dr. West: We also need to bear in mind that the tissue testing is not 100% sensitive because of tissue heterogeneity. We know that you can biopsy one area and get a different result from another part of the same tumor – let alone the primary versus a distant metastasis in the adrenal gland or two different areas of lung lesions. So, none of these approaches is a perfect gold standard. Leena, what do you think, and how soon is this going to become, kind of, wide-spread practice?

Dr. Gandhi: Well, I completely agree with Jean-Charles. Again, I guess Europe is ahead of us – I wish we had it as standard practice here, but I think we are very close, and I completely agree that, for the community, it’s especially important. I actually work in our early drug development center as
50% of my effort, so I primarily get patients coming to Dana Farber for consideration of clinical trials, and, almost always, the first step is – well, let’s try to genomically profile the tumor to determine what’s the best approach, and we’re still doing it on a research basis.

Testing takes five to eight weeks once we receive the tissue from the outside institution, so, many of the patients...

**Dr. West:** That’s a barrier.

**Dr. Gandhi:** It’s really not even a viable plan. So, it absolutely will be transformative, and I think we are very close. We are doing sort of studies to actually evaluate the feasibility of doing this, and how quickly it can be done, how generalizable it is to the community, getting tissue shipped and comparing them; the turnaround time is a couple of days and we don’t use it to replace tissue biopsy data, but I think that it will.

**Dr. West:** I agree that, having started to use it more and seeing truly practice-changing results in at least some of my patients, I think this is close to becoming a very big impact in the field, and certainly more convenient for doctors and patients.

Well, I want to thank my guests, Jean-Charles Soria and Leena Gandhi for joining me today — really, great discussion and thanks for participating!

**Dr. Soria:** Thank you, Jack!
Dr. Gandhi: Thank you.
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