

## **Transcript Details**

This is a transcript of an educational program. Details about the program and additional media formats for the program are accessible by visiting: https://reachmd.com/programs/project-oncology/optimizing-next-generation-sequencing-for-nsclc/13005/

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Optimizing Next-Generation Sequencing for NSCLC

### Announcer:

Welcome to *Project Oncology* on ReachMD. On this episode, sponsored by AstraZeneca and Daiichi-Sankyo, we're joined Dr. Jack West, who's the Clinical Executive Director at Access Hope and the Associate Clinical Professor at the City of Hope Comprehensive Cancer Center in California. Dr. West is here to walk us through how we can optimize next generation sequencing for patients with non-small cell lung cancer. Let's hear from Dr. West now.

# Dr. West:

There are a few key challenges in consistently doing broad molecular testing, specifically next generation sequencing for patients with advanced non-small cell lung cancer and increasingly, maybe other settings in non-small cell lung cancer as well. One of them is tissue availability. And many centers, they don't have a habit of consistently getting enough tissue to send that off for most or all cases. And that can be a real challenge, if it means that a patient needs to undergo a repeat biopsy, it involves another procedure and some delays. The other is that the turnaround time is weeks. And it's often three weeks, four weeks, sometimes longer if it requires getting tissue from another center where the biopsy was done, and then getting that sent off to the lab to get that tested. It just takes a while. And particularly when you have a patient with advanced non-small cell lung cancer, the patient, maybe the oncologist, may be anxious to get a patient started on treatment. And so you have this time pressure along with the competing idea that you want to get the broad molecular profile in as timely way as possible. So those are the leading issues.

There are several ways to mitigate these challenges. And I think the first is to treat molecular testing and specifically broad molecular testing like NGS as essentially a necessity for the workup of at least patients with non-squamous non-small cell lung cancer, if not all patients with advanced non-small cell lung cancer. And this means treating it like we would for testing hormone receptors and HER-2 in a patient with breast cancer. It's just not an appropriate, complete workup without doing that. And we need to treat advanced non-small cell lung cancer molecular testing in a similar way. That means that wherever you are, whoever is getting tissue anticipates the need to send that tissue for NGS testing and getting as much tissue as we possibly can safely and comfortably. And also trying to build in a timeline that allows to get these results back. That means framing the discussion with the patient by saying this is a critical component of deciding what the best systemic treatment approach is for that patient. And we're going to need to take a few weeks to get this information but that's okay. This will lead to a better outcome if we give you the best treatment up front.

If tissue is not available, if timing is really pressed, we can also use liquid biopsy. Send off a plasma test and that can often give us a useful result. The sensitivity isn't quite as good as tissue testing, but it is really quite strong and improving all the time. And the turnaround time for plasma testing is typically in the range of a week or so, could be less, could be a little more. But instead of it being three weeks, four weeks, or longer, you get the result inside of 10 days, typically. And so that is an approach that can be done with phlebotomy. So, every clinic has that available everywhere without a wait to get into interventional radiology for repeat biopsy if that would otherwise be needed for tissue.

Although next generation sequencing is really a critical component of the workup, at least for patients with advanced non-squamous non-small cell lung cancer, and arguably for all patients with advanced non-small cell, it is a challenge that leads to it not always being done for patients. And that's for a variety of reasons. I think the two biggest are tissue availability and turnaround time.

Tissue availability is really an outgrowth of the challenge that years ago, we could get away with just potentially doing a fine needle aspirate and using as little tissue as possible to get the histologic diagnosis. And that might be it. And we've evolved since then, to a time when we need as much tissue as we can get for often a broad array of molecular tests, sometimes a lot of immunohistochemistry tests at the time of diagnosis.

The second issue is turnaround time. And the reality is that thorough NGS testing takes several weeks, often three to four weeks, and potentially even longer. And certainly, some patients, sometimes oncologists feel anxiety about deferring on treatment until those results are back. And so that will sometimes lead to guessing or doing just isolated tests rather than a broad array like NGS to test more comprehensively. But we are now at a time when there are so many targets that it really makes the most sense to do broad testing to make sure that we aren't missing one of the many potential targets with available effective targeted therapies today and in the coming months to years.

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