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TRANSCRIPT

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Pathways to Precision Medicine: An Overview of NSCLC & Multi-Biomarker Testing

Announcer Introduction:
Welcome to *Project Oncology* on ReachMD. On this episode, sponsored by Lilly, we'll hear from Dr. Ross Camidge, who's the Director of the Thoracic Oncology Clinical and Clinical Research Programs at the University of Colorado. Here's Dr. Camidge giving us an overview of multi-biomarker testing guidelines in non-small-cell lung cancer.

Dr. Camidge:
So, non-small cell lung cancer is not one disease, and the number of molecularly specific subtypes that we are now requested and expected to test for before making treatment decisions has expanded significantly. There now are seven different molecularly specific subtypes with an FDA-approved therapy, and they are, in no particular order, apart from my memory: EGFR mutations, ALK gene rearrangements, ROS1 gene rearrangements, NTRK gene rearrangements, RET gene rearrangements, Met exon 14 skip mutations, and BRAF mutations. And if you're worrying about how are you going to remember to order all of those, you don't have to. What you have to do is order a next generation sequencing panel that includes all of them.

The single biggest challenge for personalized medicine is simply that some people are not being tested, or they're being tested and we're on this kind of learning curve of how to interpret either positive or negative results. So let me give you some examples. So, there's no doubt that a liquid biopsy, sometimes called circulating free or circulating tumor DNA, is very easy. It's just a blood test. And if it comes back, and it shows something that you can identify as a true oncogenic driver, you're golden. You know you can treat the patient based on that result. But if it comes back and says there is nothing there, it doesn't mean there's no driver. It may be below the limits of detection of that test, and a tissue-based biopsy may be what's needed. Now, if the patient doesn't have a big enough biopsy, the question is when do you put the patient through rebiopsy? When do you delay treatment waiting for those results? Well, if the patient is asymptomatic, you could absolutely delay treatment.

In terms of putting someone through another rebiopsy, I guess you have to factor in their chances of having one these driver oncogenes. If somebody has adenocarcinoma, and is a never smoker, I think there's a very strong case that you should rebiopsy. If somebody had squamous cancer, and had a 40 pack-year smoking history, that's a much lower chance. The National Comprehensive Cancer guidelines, and many other guidelines, suggest that all adenocarcinomas should be tested for all molecular markers, ideally within the broad, next-generation sequencing panel.

In terms of the other histologies, like squamous, it says consider testing. And the ones that they're really thinking about is either you've had a very small biopsy, and what's called "squamous" could actually be adenosquamous – a mixed histology, or an atypical squamous, and what I mean by that is a squamous cancer occurring in someone with no smoking history. And honestly, not every cancer has read the textbook. Some squamous cancers in a never smoker may still have a driver oncogene.

Announcer Close:
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