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/detecting-esr1-mutations-in-metastatic-breast-cancer-the-role-of-liquid-biopsies/16206/

ReachMD
www.reachmd.com
info@reachmd.com
(866) 423-7849

Detecting ESR1 Mutations in Metastatic Breast Cancer: The Role of Liquid Biopsies

Announcer:
You're listening to *Project Oncology* on ReachMD, and this episode is sponsored by Stemline, a Menarini Group company. Here's your host, Dr. Charles Turck.

Dr. Turck:
This is *Project Oncology* on ReachMD, and I'm Dr. Charles Turck. Here with me today to discuss the role of liquid biopsies in identifying ESR1 mutations in metastatic breast cancer is Dr. Pavani Chalasani. Not only is she an oncologist and the Division Director at the GW Cancer Center in Washington, DC, but she's also a fellow ReachMD host. Dr. Chalasani, welcome to the program.

Dr. Chalasani:
Thank you for having me.

Dr. Turck:
So let's start, Dr. Chalasani, by doing some level setting. Why do we use liquid biopsies to detect ESR1 mutations?

Dr. Chalasani:
That's a great question, Dr. Turck. As we are getting more and more newer treatments for patients, one of the important things is with these newer targeted treatments, which are great for patients, we need to ensure that the tumors have those particular mutations because we want to ensure that the patients can benefit from them and also not take the medication if it's not going to be something that the tumor is going to respond to. So frequently checking the tumors for those certain mutations, which are developing as part of a resistance mechanism or if that is something that tumors already inherently have, has been important. But the challenge for decades has been what is the frequency we put the patients through testing? Or how often can we do them, especially in the setting of a metastatic disease where there is a huge component of quality of life, and how do we want to take care of our patients?

Liquid biopsies have made an important clinical impact for patients in terms of outcomes and also what we can do to help make impactful treatment decisions for them. So liquid biopsies basically go on the premise that we are able to detect cancer DNA in the blood and check for mutations there. So as we are able to improve upon them in the past decade, there have been many newer liquid assays which have come up for looking at tumor DNA in the blood and are able to detect the mutations.

Dr. Turck:
I was wondering if you would elaborate a little bit more on how employing liquid biopsies addresses some of the challenges associated with other monitoring strategies like acquiring serial tissue?

Dr. Chalasani:
So traditionally, the tumor testing has been done by checking for the sequencing of the tumor. And that has been around for the longest time. And that has been frequently the most commonly used traditional method of sequencing for tumor. Having said that, as for the frequency of testing, ideally we would want to do it as a tumor is progressing through a treatment, to test it for developing a newer mutations or other treatment resistance mechanisms. But putting a patient through an invasive biopsy procedure, whether it is a biopsy of the bone or the lungs or the liver, is invasive, it does have a higher risk, it is not very practical, and it does have a significant burden on the patient and also the healthcare system. While we would want to get the information, it hasn't been a very practical or realistic solution in clinical care.

So to mitigate that, liquid biopsies have come up, and now we have several in clinic. But in the past decade, they have been refined,

and we are able to reliably detect cancer DNA mutations—something we are able to use with confidence and reliably in the clinic. Liquid biopsies are blood draws, so typically, a lot of times we are able to combine them with standard-of-care testing for the patient, so they're not getting additional lab draw. While blood draw does have some inherent risks compared to an invasive procedure, blood draw tends to be something patients are able to accept and be willing to do more frequently too. And for the provider or the physicians taking care of patients, it is also easier in terms of getting it done due to the faster turnaround time and reliability for the patients.

Dr. Turck:
For those just tuning in, you're listening to *Project Oncology* on ReachMD. I'm Dr. Charles Turck, and I'm speaking to Dr. Pavani Chalasani about liquid biopsies for the detection of ESR1 mutations in metastatic breast cancer.

So, Dr. Chalasani, now that we have a better understanding of the rationale behind liquid biopsies, let's focus on how we should use them in clinical practice. First, what are the optimal timing and sample types for longitudinal testing?

Dr. Chalasani:
That's a great question. So the optimal timing—especially for ESR1 mutation because that is an acquired mutation for the tumor as a mechanism of resistance for treatment, which is endocrine therapy in that setting—is if there is a tumor progression after exposure to treatment with endocrine therapy. So it could be potentially utilized in the adjuvant setting or if a patient has been on endocrine therapy with either tamoxifen or an aromatase inhibitors and has developed metastatic disease while on those therapies. Or more commonly, and what is routinely used in clinic, is in the setting of metastatic breast cancer that is hormone receptor positive but they have been on aromatase inhibitors and a CDK4/6 inhibitor treatment option and they have developed disease progression while on that therapy.

Dr. Turck:
And once a liquid biopsy is conducted, how do we identify or interpret an emergent mutation?

Dr. Chalasani:
Yeah, so the liquid biopsies detect this by checking for the tumor DNA and the mutation frequency. So one of the challenges we always think about is if the cancer doesn't have or has only a low concentration of those genetic alterations, we won't be able to detect it. So frequently, the report lists the mutation and a percentage is either reported or sometimes a very varied delayed sequencing is reported in those results. But that kind of helps us detect how much of the cancer DNA is there and what percentage of the DNA does carry this mutation.

Dr. Turck:
Now with all that being said, what kind of impact can the identification of ESR1 mutations have on our treatment approach?

Dr. Chalasani:
In clinic, it's great we are learning more of the mutations, but how are we able to change something directly for the patients? Now with new oral SERDs coming on, which are able to treat the tumors which have these ESR1 mutations, we have one which is currently approved in clinic called elacestrant. It's an oral SERD, which is approved in the metastatic breast cancer setting for patients with tumors which have ESR1 mutations. And there are several other new oral SERDs in development, so we are able to make an impact.

Dr. Turck:
And before we close, Dr. Chalasani, do you have any final thoughts you'd like to leave with our audience today?

Dr. Chalasani:
So one of the things is, we are learning more about the mutations and we are learning the impact that newer medications can have in these, so I think it's important for us to recognize that. And with some mechanisms where we are able to detect for these tumors easier, I think it's important for physicians to be aware of the various modalities or tools we have to check for these and also the newer treatment options coming up so that we can offer them for the patients early on and improve their outcomes.

Dr. Turck:
Well as those closing comments bring us to the end of today's program, I want to thank my guest, Dr. Pavani Chalasani, for joining me to discuss how we can use liquid biopsies to identify ESR1 mutations in our patients with metastatic breast cancer. Dr. Chalasani, it was great having you on the program.

Dr. Chalasani:
Thank you.

Announcer:
This episode of *Project Oncology* was sponsored by Stemline, a Menarini Group company. To access this and other episodes in our series, visit *Project Oncology* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!