

## What is my biomarker? The Question to Ask

Diane Mulligan:

What is my biomarker? It is one of the most important questions that any lung cancer patient can ask, but it's especially important for Black Americans and those living in underserved communities. I'm Diane Mulligan.

Sarah Beatty:

And, I'm Sarah Beatty. It is so important, because biomarkers may lead to targeted therapies, that can add years to the lives of some lung cancer patients.

Dr. Raymond Osarogiagbon:

Those patients given one of the oral targeted agents for that specific type of lung cancer, that five year survival rate, as far as we can tell from old clinical trials, is in excess of 60%.

Diane Mulligan:

Lung cancer is a tough topic. It's a disease that affects patients, families, friends, coworkers, but first, it's a disease that affects people. The Hope With Answers: Living With Lung Cancer Podcast, brings you stories about people living, truly living with lung cancer. The researchers dedicated to finding new breakthrough treatments and others who are working to bring hope into the lung cancer experience.

Sarah Beatty:

Today, we have the pleasure of hearing from three Black Americans on the topic of lung cancer treatment for minority communities, and why knowing to ask, "What is my biomarker?" Is so important. We will hear from Dr. Raymond Osarogiagbon at Baptist Memorial Healthcare in Memphis, Tennessee, a little later. But first, Dr. Sydney Bamed, a doctor of internal medicine and a hospitalist at Ann Arundel Medical Center in Annapolis, Maryland, has one of the most interesting perspectives on why every American, especially those who are black and African American should ask, "What is my biomarker?" She's a doctor and a lung cancer patient, and a member of the LCFA Speakers Bureau.

Diane Mulligan:

Sarah, listening to her, and to lung cancer patient, and LCFA Speakers Bureau member, Brandi Bryant about their care, and what a difference knowing their biomarkers made, and maybe even more importantly, how every black or African American should ask that question, really drives home the point, that minority and underserved communities must advocate for themselves to get the best treatments, that can increase the quality of their lives. Dr. Bamed, you're a doctor and a lung cancer patient. That's a unique combination that we haven't really had before on the Hope With Answers podcast. I'd love to hear your story.

Dr. Sydney Barned:

So, I'm originally from Jamaica and I've always been pretty active. I dance, swam, ran 5Ks. In 2016, when I was still living in Jamaica, I noticed that my exercise tolerance, I was just getting really short of breath with my runs, and I thought it was just because I was probably out of shape. But one night, I woke up extremely short of breath, and decided that I was going to get an x-ray when I went into work, the following day. They did a x-ray, saw what they thought was walking pneumonia, treated me for that, but the symptoms just didn't really go away, I started coughing. They treated me with steroids and I was migrating to DC for my residency, so I said, I'll follow up with a doctor when I get there. Of course, internship is chaotic and working 80 hour weeks, I didn't get the chance to go right away, but I started wheezing, and I was like, "Okay, I have a strong family history of asthma. With that abnormal x-ray, let me go to a lung doctor to kind of take a look at that."

Dr. Sydney Barned:

They worked me up thinking I was having asthma, and we repeated a chest x-ray, and I saw that the same abnormality I had the year before was still there. So, I said to her, I was like, "There's something in my chest. I need a CT," and we did the CT, and actually what we found, was the mass in my chest was compressing my airway, and that was the reason I was wheezing. Yeah. I can say after a whirlwind of tests, literally from the time I did the x-ray, till the time that they told me it was stage four lung cancer, was probably a month, and it was just shocking to me because my friends in Jamaica can tell you, I was very obnoxious about smoking.

Dr. Sydney Barned:

I used to break cigarettes, I used to tell them don't come anywhere near me. Why are you sucking on that cancer stick? So, it was very ironic that I was diagnosed with lung cancer. Thankfully, I was found to have a biomarker, so I am ALK positive. I'm able to take targeted therapy that just pinpoints that mutation, and it's oral, so I was able to continue residency. I still work. I work as a hospitalist now, and that made such a world of difference for me, in terms of my quality of life.

Diane Mulligan:

I think that's great, and thank you for sharing your story. I appreciate it. Brandi, you have a very unique story too, and biomarkers are part of your story.

Brandi Bryant:

Yes. Biomarkers are a very important part of my story. My story is quite similar to Dr. Barned's actually, I was not as active as Dr. Barned, however, I was a power walker, we should say. I was walking up to 40 miles per week, every week, and during those walks, I would actually be fine. I wouldn't notice shortness of breath until I would get home and I'd be talking on the phone, and looking back, I realized I also had a persistent cough, that I had just kind of ignored because I'm a busy mom of four, and the cough was more nagging, and it would be at night, but it didn't interrupt my daily life, so I paid no attention to it. But, it wasn't until I had the shortness of breath, that I thought, "Oh my goodness, I can't..." I'm trying to talk to my mom and I couldn't catch my breath, and that frightened me enough to go ahead and call my doctor, prioritize myself, and call my doctor.

Brandi Bryant:

My doctor was really proactive. He said that black women your age are at risk for sarcoidosis, so he wanted me to get an x-ray. I got the x-ray, now this... And, they thought that I had pneumonia, similar to your story, and mine took a little bit longer, but after referrals and a series of tests and CT scans, much the same, CT scan is like, something was there and the odd thing is, one of the doctors told me this, "You have no risk factors. There's no way it's lung cancer." But, after she saw the CT scan, her entire demeanor changed, and she said, "We need to get a biopsy," but she didn't give me any hope or ideas of what she was possibly looking for. But yeah, after the CT scan and biopsy, from the time I initially went to the doctor with my symptoms, it took about three months, three months before I was diagnosed with stage four lung cancer, as well.

Brandi Bryant:

Just like Sydney, the biomarker testing happened without me even knowing it. I was really fortunate to be at a community hospital, that immediately sent my sample off. I had no idea, because when you're diagnosed in shock, right? But, that was a critical part of my treatment, without me even knowing it, and although I originally started with chemo and radiation, thanks to my biomarker testing, much like Sydney, I was able to take a targeted therapy when I was at stage four, and I've had a great quality of life for the past four years. I've been able to watch my kids grow up, graduate. I mean, they're not all grown, but I'm just watching them complete these milestones, and that's really something I'm quite thankful for, that the research has made it to this point, because whenever I was diagnosed, the drug that I'm on had just been approved.

Diane Mulligan:

Very hopeful. Your story is very hopeful. I want to go back a bit though. Dr. Banned, some people may not know what a biomarker is or why it's important to find out about one. Can you tell us a little bit more about that?

Dr. Sydney Banned:

So, each cancer is pretty unique, and what you can find is you can find specific traits that can tell you how a cancer works. So, for instance, Brandi and I have ALK, but there are other biomarkers, such as EGFR, KRAS, that they are drivers of the cancer. But, if you're able to find that driver, that mutation, that biomarker, then you can take targeted therapy, which is for us a pill. We take that twice a day and it tends to be a better quality of life, versus doing the traditional therapies, such as chemotherapy or even immunotherapy. I think that that's one of the main things that I do tell any patient who's diagnosed with lung cancer, is that they should get biomarker testing, just to find out what are the different specific things about your cancer, that could potentially help with your treatment. It's very important.

Diane Mulligan:

It is important. I know that it's one of the messages that you give. What other messages do you have for Black Americans, specifically?

Dr. Sydney BARNED:

There are many issues that happen with Black Americans. Lung cancer is a leading cause of death for a lot of people, but especially Black Americans, and unfortunately, one of the aspects of it is the disparity, in terms of treatments that they get. So, I do think that I would want them to be educated, to know that, don't discount a cough, don't discount shortness of breath, don't discount wheezing, and just think, "Oh, it's nothing." Go to your doctors, tell them I've been having these symptoms. They're not going away. Can we get image, and if they're doing this workup, unfortunately for potentially lung cancer, demand that they do biomarker testing, so that could ultimately be a change of outcome, in terms of your survival.

Diane Mulligan:

Is it as simple as asking, what is my biomarker?

Dr. Sydney BARNED:

Yes. It is very simple to ask that. A lot of the times, unfortunately, in community centers especially, people are not being sent for biomarker testing. So, having the public being educated about it, sometimes will help to nudge these community doctors to get the biomarker test for their patients, especially, if the knowledge is out there. A lot of people know about immunotherapy, because they have seen Keytruda ads, and they know to ask their doctors, "Oh, so what about immunotherapy?"

Dr. Sydney BARNED:

Biomarkers should be the same. We need to say, "Hey, you're telling me I have lung cancer. I've heard about biomarkers, so do I have a biomarker?" And, if they haven't tested you, "Can I get tested for a biomarker?" Because, in my experience, I would not have been able to complete residency had I had to do chemotherapy, and all of that stuff. I would've been too tired. There's no way I could have done chemotherapy with 80 hour work weeks. But, I was able to complete my residency with no time off, because all I had to do was take a targeted therapy. I've been taking that same targeted therapy for five years now, and I've had a wonderful response. So, most important thing, what is my biomarker?

Diane Mulligan:

Absolutely. That's it. Would it have made a difference for you, Brandi, had you known your biomarker earlier? Would it have made a better quality of life? Or, did you... You said that they tested and you didn't even know that they tested, did they tell you what your biomarker was?

Brandi Bryant:

No. No. And, I wish I would've known whenever I was first diagnosed, how important that was, and how much I actually could have fought to not have to do chemo and radiation for those six weeks, because I ended up on the targeted therapy anyway, but it would've made a huge difference in me not having to be so sick. I was sick for quite a while, due to that initial treatment. But, the biomarker testing, you just have to ask. If you're diagnosed, really, with any type of cancer, ask what your tumor is being tested for, ask just... And, they will figure it out. You don't have to know the exact name of the test. Just say, what

are you testing my tumor for? And then, you can take the time to go and look it up later. But, that biomarker, the targeted therapy that I'm on right now, completely changed the game for me, and I'm so thankful for that.

Diane Mulligan:

Explain to me what targeted therapy looks like for you.

Brandi Bryant:

For me, I'm on... We're both ALK positive, but I'm on a different drug than Dr. Barned. But for me, I take four pills in the morning with food and four pills at night, so it's 12 hours spaced, and really, I wanted to say the side effects are minimal, as long as I've been on it. I don't even notice them anymore. You're a little more tired, but you just keep moving, and that, like I'm fighting stage four cancer, and you would have no idea.

Diane Mulligan:

That's right. Right. Exactly.

Brandi Bryant:

I'm very thankful for the research that got us to this point, and I'm really excited about more research to come.

Diane Mulligan:

Research has come so far, that now we have these treatments that you're talking about, and we know that there are many clinical trials out there, so we're on the cusp of moving even further. I'm wondering, Brandi, what does research mean to you?

Brandi Bryant:

Research to me, is hope in big capital letters. Research is hope. Research has me sitting here today. Research will hopefully have me sitting here in, hashtag give me 20, give me 20 years post diagnosis. I am confident that the things that these researchers are working on, especially the ones that are funded by Lung Cancer Foundation of America, I'm excited. I'm excited that I'll get to see all of my kids graduate from high school and college, and I don't care if they get married and have kids, but I just want to be there.

Diane Mulligan:

You may later.

Brandi Bryant:

I may later. I just want to be there like my mom has been able to be there for me. So, that's what research means to me, is like, I'm going to be here.

Diane Mulligan:

When Brandi said, I just want to be here like my mom has been there for me, it really brought home how important it is for lung cancer patients, especially those in underserved communities, to ask the right questions, like What is my biomarker?

Sarah Beatty:

It really struck me when Dr. Barned talked about being able to continue her medical residency, because of the targeted therapy that was so much easier for her to tolerate. Now, whenever we have the pleasure of interviewing our next guest, Dr. Raymond Osarogiagbon of Baptist Memorial Healthcare, it is like taking a master class in the latest lung cancer research.

Diane Mulligan:

It really is. Dr. Osarogiagbon dives into not only the importance of asking, what is my biomarker, but why it is essential that Black and African Americans make this question a priority, and not assume that the doctor is making the request. The first question that we have for you, as LCFA is working to educate Black Americans who are diagnosed with lung cancer, is helping them think or know to ask the question, what is my biomarker? So, can you talk to us about what a biomarker is, and after someone finds out about biomarker testing, what are some of the barriers that people, that Black Americans face to getting biomarker testing?

Dr. Raymond Osarogiagbon:

Yeah. Thank you. What is a biomarker? A biomarker is a test that you can use to identify the presence of a disease and predict its future behavior. For lung cancer, we're really excited that lots of biomarkers that have come to help us split what used to be a single disease, into many different bits of different sizes, that allows us to predict how the cancer is going to behave, and what treatment is most likely to benefit the patient, in terms of surviving the cancer and the quality of life, in response to cancer treatment. For African Americans, like anybody else who are diagnosed with lung cancer, understanding what the best treatment is likely to be, how the cancer is likely to behave, how likely we are to be able to overcome the cancer, obviously, is at the heart of the matter. No different for African Americans, than it is for anybody else.

Dr. Raymond Osarogiagbon:

So, African Americans, like anybody else who had unfortunately diagnosed with a lung cancer, should be asking the question, what type of lung cancer do I have, including what type of biomarker subset of lung cancer do I have, in order to know what is the best treatment for my lung cancer? We know, unfortunately, that all of this is still relatively new, doctors and healthcare systems are still learning about the importance of biomarkers, and therefore, like anything new, it takes a while for everybody to be aware, for everybody to gain access, and the usual people who get left behind. The poor, the relatively underinsured, the less well educated, and yes indeed, African Americans oftentimes get left behind with these innovations, such as biomarker testing. The barriers really, in my mind, are provider, and institution, and policy based. I do not think it is fair to talk about person level barriers. A patient diagnosed lung cancer, black or white, does not really want to get inferior care.

Dr. Raymond Osarogiagbon:

If inferior care is provided, I think we have to turn squarely on the clinicians and the healthcare systems, and maybe our social policies that drive, who pays for what? To ask the question, why are you not providing informed access to people? So, at the provider level, there is a real challenge. Doctors just don't know as much as you would imagine that they should. Again, this is relatively new information. It is moving very fast, so not everybody can keep up with this rapidly evolving knowledge base. In particular, cancer doctors who do a little bit of cancer here and there, may not be fully aware of this fast moving space that is lung cancer, so if you're seeing a general oncologist, chances are, you need to be really pushy about asking to make sure you get the right testing, to get the right treatment. Chances are, if you have seen a thoracic oncologist, a cancer doctor that specializes in lung cancer, you are way more likely to get the right test done, leading to the right treatment. So, that's an example of provider level barriers.

Dr. Raymond Osarogiagbon:

Institutional level barriers also exist, because this test, they may be done in-house, within the hospital's pathology lab, but in most cases, most institutions don't have the ability to do these tests. They have to be done by an external third party vendor. If, between the provider and the healthcare system, there has not been an effort made to organize how you get the right patients tested, then it is much more likely that patients will fall through the cracks and never get the biomarker test. So again, speaking about African Americans, where do African American lung cancer patients tend to go for their care? It tends not to be the comprehensive cancer centers, the NCI designated cancer centers, where you are more likely to find thoracic specialists, cancer doctors who specialize in lung cancer.

Dr. Raymond Osarogiagbon:

They tend to go to smaller practices, community based practices, practices that quite frankly, tend to provide care for relatively underinsured people, so they tend to lack the infrastructure to get testing done. That is actually a much bigger barrier that needs to be fully acknowledged. And then, at the policy level, society level, biomarker testing is relatively new and new things tend to be somewhat more expensive. So, people who are under insured may find it harder, because still, even in today's world, some insurance companies may be more resistant to providing coverage for the types of biomarker tests that we are increasingly demanding for our patients. And, unfortunately, we know that African Americans are less likely to be fully insured than others, because of the socioeconomic and longstanding racism that has existed in this country, that has led people to be socioeconomically challenged.

Diane Mulligan:

I think those are all great points, and Brandi Bryant, who we talked to earlier in the podcast, talked about how she was put on chemo immediately. Can you talk a little bit about how important it is to truly understand what type of cancer you have, by asking what is my biomarker? And then, also the importance of clinical trials, so that you are getting the most cutting edge treatment that you can possibly get.

Dr. Raymond Osarogiagbon:

That's a big, big deal. So, the issue of what treatment to give, is vital. We are really excited that we're moving rapidly in the lung cancer world, from the dark ages, where all we had was chemotherapy that had whatever benefit it had, but came with a lot of side effects, and that benefit was really limited. To a world in which you can actually find different types of lung cancer, that you can use a specific treatment for, I'll give you an example about the benefit we're talking about. If we're talking about patients with stage four lung cancer, if you took all of them together, and you just look at those who get chemotherapy, not distinguishing the subset of lung cancer, just give everybody chemotherapy, and that's it, the aggregate five year survival of people treated that way.

Dr. Raymond Osarogiagbon:

Stage four lung cancer, the most advanced stage is about 4%, maybe if you want to be generous up to 6%, that's 4% to 6% of such patients, who don't have any characterization of their lung cancer, just lung cancer, stage four and we give you chemotherapy. 4% to 6% can expect to survive five years. Now, if you look at the subsets of lung cancer that we're talking about, so for example, the subset of lung cancer that has the ALK mutation, which is present in, we think anywhere from 2% to 7% of all patients with lung cancer, those patients given one of the oral targeted agents for that specific type of lung cancer, that five year survival rate, as far as we can tell from old clinical trials, is in excess of 60%.

Diane Mulligan:

Wow.

Dr. Raymond Osarogiagbon:

So, you go from 4% to 6% five year survival, to up to 60%, if you get the right treatment for the right cancer. As with ALK mutated lung cancer, so with some of the other subsets, the EGFR mutated lung cancers, the ROS1 mutated lung cancers, the BRAFF mutated lung cancers, the MET exon 14 mutated lung cancer, all... There are at least nine subsets of biomarker driven lung cancers, and that continues to change all the time. So, that's why it's vital that we get tested, so we know which treatment would benefit us. Now, it is true though, that the biomarker test results sometimes can take a few weeks to get back, and there's the natural fear that, okay, wait a minute, you just told me I got stage four lung cancer. I know lung cancer kills. Now, we hurry it up to find out I had lung cancer, you're going to tell me to wait? How is that even sensible? And the answer is, it depends.

Dr. Raymond Osarogiagbon:

Now, if you have a lot of symptoms, so basically, the lung cancer is clearly grabbed hold of you and it's dragging you down a hole, yes, indeed. We may not have two, three weeks to wait on a biomarker test result, and our hand is forced. We have to rescue, and chemotherapy, we know can buy us some time. But, that is the minority of patients. In most cases, patients do have the luxury of a few weeks here and there to wait, and the point we need to emphasize, is that that wait, as uncomfortable as it might be, is very well worth doing. I will tell you, as a lung cancer physician, that most of my patients are willing to wait. When they know that the difference we're talking about is the possibility of taking a pill once or twice a day, with this tremendous possibility of benefit, versus coming in every three weeks to my



chemotherapy shop, to get IV fluids with all the side effects, IV infusions with all the side effects and all of that, most people are very happy to wait.

Sarah Beatty:

So, you have walked through some really wonderful information about chemotherapy here, and the difference between a targeted therapy and chemotherapy, and I want to pull out just a couple of terms that you used, that I think are really, really important here. Thoracic oncologist, is a lung cancer specialist. That's what you are, that's the type of doctor who specializes only in lung cancer, is that correct?

Dr. Raymond Osarogiagbon:

Yes. Diseases of the chest, the vast majority of which are lung cancer. There are also a few others like mesothelioma, thymomas, and even esophageal cancer, but the 800 pound gorilla in thoracic oncology is obviously lung cancer by far, in a way they're more lung cancer patients, and we hope more lung cancer survivors, than any of the others. So yes, essentially that is correct. That term is important, because of the rampaging increased complexity of lung cancer. Unfortunately, 10 years ago, 20 years ago, lung cancer was very simple. You had stage four lung cancer, which was what almost half of the patients had at the first diagnosis, and then the others would eventually behave that way later on, and you got some treatment for a while, and then you died. The range of treatment was very narrow. We had a platinum drug, and then something we added to it, and then later on, we're very excited, there was a third drug that kind of helped the chemotherapy do better, but we talked about what you look forward to, with all of that.

Dr. Raymond Osarogiagbon:

Now, we're not talking about a single monolith. We're talking about fragments of cancer. Some of these cancers are relatively rare. You talk about rare lung cancer, so for example, NTRK mutations, which is a subset of lung cancer with specific gene mutation, you find in less than 1% of lung cancer patients, it's actually less than half of 1% of lung cancer patients. You will never find that cancer to treat it, if you're not looking for it. So, it takes a thoracic oncologist, or at least somebody who continues to stay on top of the fast moving knowledge about lung cancer, to be able to provide you that access. Every six months, there's a new biomarker for which the FDA literally gives permission to begin to use it, and fast moving knowledge. We don't blame people for not being able to keep abreast with everything. But, what we need to do is protect our patients, by making sure that they gain access to the knowledge that exists on earth, when their cancer is diagnosed.

Sarah Beatty:

And so, it sounds like from this discussion, because sometimes chemotherapy does get a bad reputation, and you've mentioned that it can have some significant side effects. But, if I understand you correctly, you are saying that chemotherapy may be the appropriate treatment, if someone is working with a doctor who really understands lung cancer, the doctor has checked for biomarkers, and then made a treatment plan, based on the presence or the absence of a biomarker. And then, chemotherapy might be the right route, or another therapy might be a better route. Is that true?

Dr. Raymond Osarogiagbon:

That is correct. So, the role of chemotherapy as first-line treatment by itself, in lung cancer is actually shrinking fast, because as every six months, a new biomarker driven treatment is approved by FDA. It's like a pizza with multiple slices. It used to be the whole pizza was chemotherapy, it's now by my estimation, about 25% of the whole pizza. So, the challenge again, is that the other slices of the pizza, some are thinner than others. There are just several different types. Now, we want to make sure people understand that what we're saying is that we want to be able to know what the cancer is all about. That's why we're saying do this biomarker testing. Now, most biomarker tests are for gene mutations, but there's also a protein test we use, to try to predict how likely somebody will respond to immunotherapy, which is another class of drugs that we use.

Dr. Raymond Osarogiagbon:

Not chemotherapy. It's a class of drugs that helps the immune system fight against the cancer better, and that when we're talking about biomarker testing, I want to make sure we don't forget that, but the point though, is that chemotherapy has its place. It's just that it's use by itself, continues to shrink. We oftentimes, we'll use when we have to use chemotherapy in the first-line, oftentimes we would prefer to combine it with immunotherapy, because we know that immunotherapy combined with chemotherapy makes chemotherapy way more effective, than chemotherapy by itself. And then, the other thing is that there are people for whom immunotherapy, by itself, is good enough and they don't need chemotherapy. So, we are grateful for all the knowledge and the help that chemotherapy has provided us in our patients, over many decades. But, we're also excited that we're moving into a new world, in which chemotherapy may or may not be needed. So, we have more options and we want to make sure our African American patients, like everybody, else gains access to that full range of options.

Diane Mulligan:

Thank you to Dr. Osarogiagbon of Baptist Memorial Healthcare, lung cancer patient, Dr. Sydney Barned with Ann Arundel Medical Center, and lung cancer, patient Brandi Bryant, for sharing the importance for everyone, but especially Black Americans, and those who are underserved to ask, what is my biomarker.

Sarah Beatty:

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Diane Mulligan:

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