Montessa Lee: 00:02 You know later on, my oncologist would tell me you were young 28 years old, healthy non-smoker it wouldn't have been the first, second, third, fourth of things to think about me having lung cancer

Diane Mulligan: 00:14 Advances in lung cancer treatment over the last few years have made it possible to live with lung cancer for years after diagnosis, but treatments for small cell lung cancer haven't advanced much at all over the past 35 years. It occurs in about 15% of all lung cancer diagnoses and generally responds well to chemo and immunotherapy. The challenge is to research and develop treatment options for when the disease returns with a vengeance, often within six to eight months. Qverall survival rate is very low, but Dr. Triparna Sen is doing everything within her power to change that. I'm Diane Mulligan.

Diane Mulligan: 00:55 And I'm Sarah Beatty. Small cell lung cancer patients have more hope for the future. Thanks to several newly approved treatments and several more on the way. Today on the living with lung cancer. Hope with answers, podcast, a conversation with one of LCFA's young investigators, who's on the cutting edge of new small cell lung cancer research. And a look at what drives a 14-year small cell lung cancer survivor in her work advocating for the underdog.

Diane Mulligan: 01:35 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.

Diane Mulligan: 02:08 It is so exciting to be able to share some really good news about small cell lung cancer. Small cell lung cancer is the focus of several LCFA young investigator grants. Most recently with Dr. Triparna Sen of Memorial Sloan Kettering cancer center in New York city. We'll get to a fascinating conversation about what she hopes to accomplish with her work in a few minutes.

Diane Mulligan: 02:35 But first let's hear from a 14 year small cell lung cancer survivor. Montessa Lee shared her story with us during the amazing world lung cancer day conversation we had and explains exactly what living with small cell lung cancer means to her.

Montessa Lee: 02:53 The oncologist. I will never forget this the day he told after the biopsy and things and told me my diagosis, he said they used to

call it oat cell cancer. Cause it looks like small oats, um, underneath the microscope. And he said, you know, it was really the crazy name. My cousin was there with me at that time. And we were like, yeah, that is a weird name. You know, I don't want to think about eating a bowl of oatmeal that looks, you know, different under the microscope. It is also a more aggressive form of cancer. Um, if you watch your news lately, I'm sure people hear about non-small cell, small cell lung cancer that are coming out, but small cell is a smaller portion of patients also diagnosed with small cell compared to non-small cell.

Diane Mulligan: 03:38 Tell me more about your journey. So once you were diagnosed, what was your journey like?

Montessa Lee: 03:42 So when I was in the ER, the night, they finally found the tumor, my cousin got on the phone and called another cousin of mine who is a doctor at another hospital and everybody got in motion right away to figure out what they were going to do. Um, and when I was sitting there, I was, I heard we're going to do a biopsy and start an IV. And I said, I have to go home. You know, I'm not going to sit here. I heard needle in my head. I heard needle and surgery. I was like, no, those two options are out. And so she told me to, uh, can the doctor convinced me to look at the x-ray and three-fourths of my lungs were covered with this mass. So I said, well, yeah, I guess I'm staying. And that night they immediately did a biopsy, a needle guided biopsy.

Montessa Lee: 04:31 They said they didn't get enough tissue had to go back in the next week to get an open chest biopsy. Um, met my oncologist and immediately was hospitalized that year. It was about the Thursday before Christmas. Um, and I ended up being in the hospital the Thursday before Christmas until after new year's that year. And they immediately started chemotherapy. They put a MetaPort in, they checked my heart on the perio cardio staff to make sure there was no cancer there. And I had, um, I forgot how many rounds of radiation and uh, eight weeks, eight cycles of chemotherapy. So I didn't finish chemo until probably the end of April of 2007. And then about that time prophylactic cranial brain radiation came about. So I had radiation to the brain and my last day of my brain radiation treatment was the first day back to school. The kids weren't there yet. It was inservice days, but that was my last day. Yes. Yeah, yeah. Life, as you know, it, you know, stops, you know, I was very active, active in my church going on mission trips and very involved. And I was literally at work one day and in the ER, the next

Diane Mulligan: 05:47 That's crazy and what was going when they said the word cancer, what went through your head?

Montessa Lee: 05:52 So at first they didn't, so it was a progression. So when I was there in the ER, the early December, they said it might be cancer. It might not be, you know, um, and then they said it might be some rare form of cancer. So until I finally got that open chest biopsy, I didn't really get the full, full diagnosis, but you know, I'm a woman of faith. And that night when I was in the ER in the hospital and I heard the might be, might be, might be what kept me going was, you know, I just heard the voice and it spoke to me. I believe it was, you know, the, my, my faith, the speaking to me and saying, "this is going to be something bad, but it's not going to kill you. It's going to be a healing testimony for somebody beyond yourself." And so I knew my voice. I had to lend a voice to this disease and it wasn't until later after I got the diagnosis of small. So my oncologist never told me, gave me a death sentence. Thank God. He never told me the stats right away. I found that on my own when I went home and did the research.

Diane Mulligan: 06:50 And once you did the research. When did you decide to write your book? Let's talk a little bit about the book that you

Montessa Lee: 06:55 Oh yes. So I wrote a book, um, called He Whispered Life. And ever since I was younger, I used to journal. And as I was journaling, you know, it was just kind of therapeutic and I had decided, while I was sick. I was like, let me write. And that's the cover of my book. Well, thank you. I said, let me write down my thoughts, you know, so I won't forget any of this journey. So I was just doodling on and at low time, low points. So one low point was I finished treatment. The tumor had responded to the chemotherapy. It was showing no evidence of the disease on the pet scan, but I still had a mass in my chest and the surgeon wouldn't operate. So...

Diane Mulligan: 07:38 Stop there for a second. Cause I'm not sure everybody, including me understands how you could have a mass in your chest and still have no evidence of disease was the mass benign?

Montessa Lee: 07:49 Yes. So, um, and the, for the insurance company, my nurse case manager thought that because the tumor was so large and I forgot to mention that at the time they found it, it was a 15 centimeter mass, the size of a cantaloupe in my chest.

Diane Mulligan: 08:02 The size of a cantaloupe, like, we're talking this big

Montessa Lee: 08:06 Nine centimeter mass and, and mind you, you know, no one had ever given me an x-ray. That's why I thought I was just had asthma or something. You know, otherwise I'm functioning, not a hundred percent capacity, but I'm functioning to some degree, um, with a lot of trouble breathing and some issues with my heart going on as well, with fluid built up.

Diane Mulligan: 08:30 That's tremendous. I mean, what you have been through, and yet you've taken your voice and you've lent it to advocacy and really being a special education teacher gave you some interesting insight. Can you talk a little bit about that?

Montessa Lee: 08:44 Oh yes. Yes. So I, um, and, and part of my book talks about that too, how my journey came into teaching because it wasn't my undergraduate degree. So teaching was my calling. I do believe that it was my calling, a calling to end up in Maryland, where I live and, um, a calling to work in the state. I live, I mean, I'm sorry to the district that I lived in. And when I was in North Carolina still, I started working with children that had autism. And I was very passionate about learning more, especially about the brain research with autism. And I, um, ended up going I'm in Maryland now. And I've been working. I was even in my master's program when I got sick.

Diane Mulligan: 09:24 You told me that, that you were trying to finish, correct?

Montessa Lee: 09:28 Close to. I don't know how many more semesters I had, but I was almost to the end. You know, I was way more than halfway done. And, um, here's this diagnosis and me still trying to persevere to get that degree done and, and fight for our kids, you know, fight for the marginalized students and, and our students with special needs. I had a special affinity to work with kids with autism.

Diane Mulligan: 09:49 That's beautiful. I love that. How did you push through, I mean, you, I know that you were close, but you were going, were you going through chemo at that time as you, while you were also studying to finish up?

Montessa Lee: 10:02 So the night I went to the ER, I was on my way to a grad school class and the pain was unbearable, but I had, I had a quiz that day, you know, a test and I was like, Oh, let me just see

Diane Mulligan: 10:13 You are one dedicated person.

Montessa Lee: 10:16 Yes, I, you know, I don't, and nowhere in my mind did, I think I was going to end up in the hospital that night. Um, pain was

bad. Went to go take the test, the pain subsided some. And I, and matter of fact, that night, I also had, um, another one of my cousins. I have a very large extended family. Another one of my cousins, uh, her mom was calling me because she was in labor close to that time too. So I have, I have all these things going on at once. You know, a new relative to the family. I have to take this quiz. I'm trying to persevere. And because I didn't know what was wrong with me. And, and by the time I got home, the pain kind of subsided, I live with my, my another cousin at the time. And I almost told her, no, no, let's, let's just wait.

Montessa Lee: 10:56 I don't have to go to the ER, the pain feels a little better. And something told me, let me just go and they can give you a painkiller, you know, something to ease the pain. Yeah. And, um, so after, after that, and I realized I was going to stay in the hospital for a while, I still had a couple of more assignments to finish my program. And I said, I'm not going to take an incomplete, you know, I have to finish. Um, just because I knew I had come too far and I didn't want to repeat the class or, you know, take an incomplete. So I contacted the professors, was able to remotely, um, finish my last few assignments and then I had to take a semester off.

Diane Mulligan: 11:35 But then you started working with the children and you talked a little bit about earlier about working with children with autism. What did that teach you?

Montessa Lee: 11:43 It taught me a lot. So from after, and you'd never would think that my lung cancer diagnosis and my advocacy work with lung cancer, were tied education, but it did. So after going through these trainings for lung cancer advocacy and these conferences, I learned to see, well, after my diagnosis, let me back up a little bit after my diagnosis. And I did my research and realized how inadequately funded lung cancer was compared to other cancers. I was angry. You know, I just kept emailing organizations trying to find information saying, this is an atrocity, you know, years later, we're not progressing. You know, this was in 2006, right? So I took that anger. Then it turns into advocacy. And I, you know, my job wasn't working during that time, you know, up until the next school year, when I went back to school and John Lewis who passed away recently, you know, he said, he says, if you see something like an injustice going on, you must say something, you know, you have to do something.

Montessa Lee: 12:43 And I always knew something burning in me. Some passion. Sometimes I would see things that weren't right. But I realized

what education needed was the same type of advocacy that they were teaching us in the lung cancer community.nough is enough that we see these atrocities, especially for our students with special needs. Sometimes they are marginalized students just as well as students in poverty, um, you know, students of color. So we have to do something to provide equity and access instead of just measuring them to some level of a test. I know like they can't be defined by a box. So that's my goal, now. I look I'm back in school, but my goal is to work with them and to connect the policy I'm learning and the advocacy efforts, I'm learning from the lung cancer community and tie it into students with disabilities and make outcomes improved for them.

Diane Mulligan: 13:35 The other thing is that you have really found your voice when it comes to lung cancer. And you talk so much about that. Um, you were part of an LCFA program where speakers Bureau members and you're on our speakers Bureau. We're so lucky to have you, um, ask doctors questions about the most, um, important details to patients. Uh, it's called the hope with answers program, which is over on, um, LCFAmerica.org.

Montessa Lee: 14:01 There's a series of clips that, that anybody can go back and watch that talks about small cell lung cancer. And I'm really excited that Dr. Lovly is really reaching out and doing some research for small cell lung cancer. For so long. We've kind of been forgotten. So that's what hope with answers. And that's what the foundation is also, you know, we go out to speak and advocate. And just like today that we're showing, living with lung cancer. So yes, we need research. Yes, we need funding, but you don't have to go up in your bed. And, you know, people hear cancer and they think it's a death sentence sometimes, but here you're seeing people living.

Diane Mulligan: 14:38 Exactly what we were lucky enough to see throughout the day on world lung cancer day. People showing how they are living with lung cancer every day, spending time with family and friends and contributing to their communities like Montessa does every day through her work with children and through her advocacy.

Diane Mulligan: 14:56 Up next, we'll meet with one of LCFA's young investigator researchers who's working on new treatments for small cell lung cancer.

Diane Mulligan: 15:07 Are you enjoying the Hope With Answers, living with lung cancer podcast? Consider making a donation to help LCFA

produce this resource for patients or anyone seeking answers, hope, and access to updated treatment information, scientific investigation and clinical trials, just text L C F America to 41444 to join in this important fight.

Diane Mulligan: 15:42 LCFA's main mission is to fund young investigator research grants research that helps find new treatments for non-small cell lung cancer at a faster and faster pace all the time. But for small cell lung cancer patients, there have been relatively few new treatments over the last 30 plus years until now. There are now new treatments for small cell lung cancer and new research is happening right now.

Diane Mulligan: 16:11 One of the people adding to that new body of knowledge is Dr. Triparna Sen assistant attending in the thoracic oncology services at Memorial Sloan Kettering cancer center in New York city. She's one of LCFA's, newest young investigators. Who's focused on novel therapies that reactivate the immune cells and make them capable of eliminating small cell lung cancer cells from the body. We really are so excited to talk to you about your, um, very interesting and hopefully incredibly useful research. So let's talk about small cell lung cancer. Unfortunately we know it's the most aggressive form of lung cancer. Can you talk about some of the other characteristics it has?

Triparna Sen: 16:58 Before I jump into talking about small cell lung cancer in particular, I would just do like to give our audience a little bit of background about lung cancer in general, just to set the premise of how terrible this diseases is. So lung cancer is caused by unchecked growth and spread of some cells in the lungs. And it is the most common cause of cancer related deaths, as many of our audience must already know in the U.S. and worldwide. So each year in the U.S. about a quarter million people are diagnosed with lung cancer and about 150,000 people die from lung cancer. There are two major types of lung cancer, uh, non small cell lung cancer and small cell lung cancer. Small cell lung cancer is the area of my research. So small cell lung cancer, as you very rightly pointed out is the most aggressive form of lung cancer.

Triparna Sen: 17:48 It happens to about one out of every 10 people who are affected with lung cancer. So, in an estimate about 30,000 Americans die every year from small cell lung cancer and an estimated quarter million people die worldwide. So as you can imagine, it's a major public health problem, not only in the United States, but globally. So small cell is characterized by very

rapid growth, early metastasis and exceptional lethality. Like, uh, it, it's not the kind of disease that would sneak up on you over years. It's a disease that will happen fast, and it's a very aggressive disease from that point onward, there are no single causes for small cell lung cancer as such, but we have seen that the major risk factor is smoking. So, and it also the risk factor increases depending on the, how many years the patient has smoked and how many packs that they have smoked over those years.

Triparna Sen: 18:50 Um, other causes that may also include is if you have been exposed to secondhand smoke, um, that is equally, uh, harmful for you, uh, exposure to radon or other harmful chemicals, air pollution. Uh, if you have other lung diseases, you may be more predisposed to having small cell lung cancer. If you've had prior radiation or to your breast or to the chest area, then you can have greater risk factor of having small cell lung cancer. The symptoms are not very specific. Uh, possible symptoms may be a cough that won't go away. It's a persistent cough that you may have, and you may cough up blood, uh, in that when you're having this persistent cough. Hoarseness of voice that may happen, um, you may have just a general chest pain when you're coughing or when you're laughing out loud. So these are the general symptoms, uh, for small cell lung cancer.

Triparna Sen: 19:46 But as I said, the symptoms are not very specific. But what I can summarize is that sponsor lung cancer is an extremely rapid growing disease. It spreads throughout the body. And due to this nature of small cell lung cancer, it has historically been one of the hardest can cers to treat. And the prognosis is really dismal, uh, for patients with small cell lung cancer, we see, uh, less than 5% even have a two year survival rate. And the overall survival is less than one year. So it's a terrible disease is all I can say about this.

Diane Mulligan: 20:22 Small cell lung cancer. Hasn't had very many developments in 30, 35 years. It really, the only treatment was chemotherapy. And now what researchers are doing is saying, okay, we know that immunotherapy works in some patients, and we know that combinations might work in some patients.

Diane Mulligan: 20:48 And is this afresh look at therapies that have existed for 35 years and just weren't put together, or is this new research that's come out to find a completely new approach or new treatment for small cell that no one knew about before?

Triparna Sen: 21:06 Right. That's a great question. Actually, it's a little bit of both. Um, we did not know much about the biology of the disease to begin with in the last 30, 35 years now with the advancement of technology. Uh, we are now looking into the disease in a completely different perspective, because as I mentioned before, small cell is very different from non-small cell lung cancer. In non-small cell lung cancer, you can, uh, there has been advancements and great advancements depending upon the mutation signature of the cancer, but unfortunately for small cell lung cancer, it is not a mutation based disease. It has a lot of mutations, but none of those mutations are actually actionable by drugs. So now we are going into the gene expression level. Now we are finding new targets. So what's your question. What I got from your question is, is it existing drugs or is it new drugs?

Triparna Sen: 21:59 And I would say a little bit of both. As we know, more and more and more about the biology of the disease, we are identifying new pathways and new targets, uh, and new therapies are coming up. You're also repurposing all the drugs that we never knew might be a target for this disease. And we are bringing them into the clinic now as a single agent or as a combination. So, I think as our idea of the disease or the biology of the disease, evolves, these therapies are going to be evolved, and we are going to bring not only newer targets, but also repurpose older targets that we sort of had an idea about, but we did not know that in what context in the disease it will work. And that's why by identifying biomarkers is so important is because the right context really matters, especially for small cell since the window of opportunity for treatment is so small,

Diane Mulligan: 22:52 Dr. Sen, let's talk about your research specifically. You're working on two areas of small cell lung cancer research, and LCFA is helping to fund your research in epigenetics, which is trying to figure out how to turn on the body's immune system switch so it can attack the cancer. Can you tell us a little bit about that?

Triparna Sen: 23:13 Over the last few years, we've spent a lot of time trying to understand small cell. So what small cell lung cancer does is essentially hides itself from the immune system. So your body's immune system doesn't even recognize small cell as a foreign body enhance attacks. It hides itself. So what we believe is this is mainly because that small cell lung cancer has a lower expression or the lower, uh, level of a gene or of a lower expression of MHC class one, which is, which helps in identifying cancer as foreign and held hands, helps the body attack it. So

what my research, with the generous funding from LCFA, what I'm trying to do is reengage the immune system of the small cell lung cancer patients, and then eliminate, uh, small cell lung cancer tumors by restoring the expression of MHC class one. So as you said, epigenetic modifier. So what are epigenetic modifications? Epigenetic modifications.

Triparna Sen: 24:17 I know it's a mouthful. It's just the changes that you make on the DNA at a higher level, so that you can turn on or off a gene. So what we have seen is these genes that are important, or the epigenetic modification of DNA is actually working very cleverly in turning off the genes that the body needs to actually fight with the cancer. The immune system actually needs these genes to fight with the cancer. So the cancer is being very intelligent and trying to turn off these genes. So we have identified a few of these genes and we are now using inhibitors or small molecule inhibitors targeting these genes so that when we suppress them, then we can make the body's immune system more aggressive. It can recognize the cancer more. And then, when it's treated in combination, it would improve the immunotherapy response, uh, in small cell lung cancer, which we really need because immunotherapy is not working as well as it would as we would like it to. So with my research, I'm combining epigenetic modifier inhibitors with immunotherapy, with the hope that it would improve the effect of immunotherapy in this cancer type.

Diane Mulligan: 25:33 So you have another area of research where you're looking at DNA damage damage to the response genes and how they can help the body's immune system recognize cancer and attack it. And I hope you can explain this in a way that, that I can really grab a hold of it and get a picture of, you know, what this research is going to mean to people who are living with small cell lung cancer.

Triparna Sen: 26:01 Absolutely. I'll try my best. And I'm really excited about this area of research too. Uh, so as our understanding of small cell lung cancer has become better, we have identify targets and one of the abilities for this cancer type, Just imagine this as Achilles heel, just one area of the tumor or one area of the cancer that when you hit is actually going to cause damage. So what we have found, pathways that help in the repairing of DNA, which we call as DNA damage repair pathway. Players, the crucial players in this pathway are actually vulnerabilities for this cancer. And, uh, some these targets are PARP and check and, uh, you know, these are the vulnerabilities. So what, when you inhibit these targets with the small molecule inhibitors, you can

essentially kill small cell lung cancer cells and also cause decrease in the tumor growth in mice.

Triparna Sen: 27:01 So what we know from other cancer types is that when you have increased damage to your DNA, immunotherapy works better. Because increased damage to DNA tells your immune system, but there's something wrong going on here. I think you need to take a look here. So I think that's what happens when you have increased DNA damage in your cells. So we hypothesized that if we can cause more and more DNA damage with these inhibitors and then combine it with immunotherapy, then immunotherapy will work better. And that's exactly what happened. So in the lab, what we did was, we took tumor bearing mice with small cell lung cancer tumors, and we treated it with these DNA damage repair inhibitors with immunotherapy. What we saw was when you combine these two within the first week, the tumor starts shrinking. In most of the animals, the tumors not only shrink, but they totally go away.

Triparna Sen: 28:01 And this effect was sustainable up to three to four months. And why this is so encouraging for us is because small cell lung cancer is so aggressive. The disease progress is so fast. So to have tumor clearance was a really remarkable finding for us. So the next steps is we are taking this to the clinic. So these DNA damage repair inhibitors that are already in clinical trials for small cell lung cancer, we now combining it with immunotherapy. What we really want to see is inpatients. Do these combinations really work as well as we saw it working in the lab and is the response sustainable. But I think I'm very hopeful because the results that we got in the lab were so remarkable that we are very, very hopeful that the next steps in clinical trials would also give us such remarkable data, but I'm really excited about this field as well.

Diane Mulligan: 28:57 I love that because that's what this is all about, hope with answers, right? So I'm thrilled that you're hopeful about these new ways to treat small cell lung cancer in the future. Um, and how might that treatment change? What would people see and how far away are we from from seeing these changes come about?

Triparna Sen: 29:16 Yeah. So there are active research going on, um, in small cell lung cancer and there are active clinical trials. So all these drugs that I've been talking about are already in clinical trials, either a single agent or in combination with immunotherapy. So I think over the next few years, we will get data from these clinical

trials telling us whether our research has led to a real sustainable improvement in patients because that's our ultimate hope is to improve the life span and quality of life for patients with small cell lung cancer. And I think this would be so combining an epigenetic modifier, which was my LCFA funded grant, uh, combining that with immunotherapy would be a very active area investigation going forward. And we are working actively in the lab also to see how we can tweak and what subset of patients it would work. So that would remain an active area of investigation.

Triparna Sen: 30:11 Combining DNA damage repair inhibitors with immunotherapy would also be an, a research or be. I think the field is looking forward to, to see how this happens in patients. So I think we would see shifts in those. Um, and I think in terms of technology, we are making really, really good strides. My group is now looking at small cell lung cancer at the single cell level. Like not even a whole tumor, we are going deeper and disecting cell by cell, by cell so that we can see what happens in each cell when a cancer progresses or when a cancer undergoes treatment. So I think having that sort of technology with the funding support that we get from organizations like yours, looking at the single cell level for small cell lung cancer will give us a lot of insight into the biology of the disease. And that would lead to newer therapies for small cell lung cancer. And we already have a lot of those in the clinic, but I think there would be more coming in in the coming years, uh, with, uh, our investment in technology at the single cell level.

Diane Mulligan: 31:18 That's fascinating. What, as you're, as you're in the lab and looking at these different areas of research, and as you mentioned, there's a number of groups doing small cell research right now, what are other areas or, or things that you expect to be coming down the pike in the future that are relevant for your team or for other researchers, uh, looking at small cell lung cancer?

Triparna Sen: 31:46 I think understanding the mechanism of resistance to immunotherapy and to other drugs would be key because once we know why drugs become resistant, we can find a way to overcome that resistance. So I think understanding mechanisms of resistance to either chemotherapy or immunotherapy, which is an active area of investigation for my group and also for other researchers in the country, I think that would be a very, very important area of research is understanding, mechanisms of resistance. Um, I talked about biomarkers before, so identifying the biomarkers of even response so that we can put patients in

the light, right clinical trials would be very important. The other areas would be combination trials with other immunotherapy regimens like TIGIT or CTLA-4. I would not go much into the details about those, but combination immunotherapy are also being conducted and we're looking forward to what happens going forward.

Triparna Sen: 32:45 And I think another very interesting area, and I think this speaks for both non-small cell and small cell and the area that my research group is also interested in is how so lung adenocarcinoma, which is a non-small cell lung cancer actually becomes resistant by transforming itself or by changing its form and changing to small cell. So what I'm interested in learning is these transformed small cells that's also that has emerged from non-small cell. Is it different from the actual small cell lung cancer? Does it have the same drug targets? Does it have the same genomic makeup, or it is a completely different disease and we need to come up with new targets. So I think small cell transformed it transformed small cell would also be an active area of investigation. What I can summarize is that we've come a long way. I mean, we understand the disease a lot more than we did even five to six years ago, but I still feel we are pretty early on in the game. There is much more work to be done. There's so much more to learn about the disease, whether the drugs would work. Though, we are making great strides. We also have a long way to go in understanding this disease. And I think, uh, next few years will be crucial in knowing whether the research that we're doing currently or whether the drugs that are in the clinic right now, uh, does work in the patients as well as we think they might.

Diane Mulligan: 34:14 I am just in awe at your ability to explain this. And, and, um, and I'm so grateful that people like you, researchers, young investigators, like you are on the front lines of this fight, bringing a new approach, you know, using technology, um, and starting to pull apart this incredibly complicated knot of, um, research and how cancer works. I mean, just to hear you describe it is, is really incredible to give people a perspective of how complicated this is. It's maddeningly complicated.

Triparna Sen: 34:54 It is. I mean, uh, it is a very, every patient is unique. Every patient is different. So the concept that lung cancer is the same, is the first thing that our audience needs to kind of put away because a patient that has worked for your friends, your family, your neighbors will not work for you, that the physician and the researchers really have to look into what fits for you. It's not a one size fits all. It is lung cancer it's sounds similar disease, but

it's a different disease. The researchers need to really work on what would work for you. Um, and that's what we're trying to do is that not putting every patient on the same clinical trial or giving them the same drugs, we are trying to see what would work for you particularly so that we can save the time for the treatment, the money for the treatment, and then put you on the drugs that might actually work for you and give you sustainable data. That's our hope is to put every patient on the right clinical trials.

Diane Mulligan: 35:58 You can hear the passion in doctor sends voice when she talks about her work. We're so grateful for the chance to talk to her about the work she's doing to find new approaches to small cell lung cancer treatment.

Diane Mulligan: 36:10 Thank you to our guests today. Small cell lung cancer, survivor Montessa Lee and Dr. Triparna Sen of Memorial Sloan Kettering cancer center. And thank you for joining us on the hope with answers, living with lung cancer podcast. Please join us again next time.

Diane Mulligan: 36:29 Make sure to subscribe to the Hope With Answers: Living With Lung Cancer podcast, you'll be notified every time a new episode is available. So visit us online at lcfamerica.org, where you can find more information about the latest in lung cancer research, new treatments, and more. You can also join the conversation with LCFA on Facebook, Twitter, and Instagram.