Bob Carlson cannot describe what a symptom of cancer feels like, even though he was diagnosed with stage IV lung cancer five years ago. A growth was found by chance during a CT scan and later a thoracic surgeon made the diagnosis of stage IV non-small cell lung cancer, which had metastasized to his adrenal gland. It was found early enough that he did not notice any symptoms, but not early enough for standard treatment to have much effect. After several rounds of chemotherapy, Bob was told a clinical trial might be an option and that he should meet with Dr. Roy Herbst at Smilow Cancer Hospital, a nationally recognized leader in lung cancer treatment and research.

The trial that Bob was hoping to participate in was Dr. Herbst’s BATTLE program, which uses molecular analysis of tissue biopsies to help determine the best treatment. However, Bob’s blood pressure was too high and they could not get it lowered in time for the trial. Luckily, Dr. Herbst was also leading another trial, an early-phase immunotherapy trial looking at a new anti-PD-L1 antibody called atezolizumab (previously known as MPDL3280A). The trial was originally supposed to last one year, but Bob has now been on the trial for 3 years. In the first year, the tumors in Bob’s lungs and adrenal gland shrunk significantly, and the drug continues to keep his cancer at bay, slowing its growth.

Atezolizumab is an immunotherapy drug that works by helping the immune system find and attack cancer cells. It begins with sequencing the genes of the individual’s tumor to identify the protein PD-L1, which blocks the immune system from attacking the cancer. “This trial is for patients whose tumors have high expression of PD-L1 and whose disease worsened during or after standard treatments,” said Dr. Herbst. “Since Mr. Carlson started on the trial, atezolizumab has completed phase III trials and is being fast-tracked for approval from the FDA. Patients like Bob have made this possible.”

As explained in a recent paper published by Dr. Herbst and his colleagues in Nature (27 Nov 2014), the response to this drug has been significant in a large cohort of patients, with few side effects. This trial was unique in the fact that it was a first-in-human study, meaning they were hoping to establish whether the drug behaved in human subjects as
"When my wife and I first learned that I had cancer, she was terrified of losing me. Now each night before bed, I tell her, I am not going to die today, and thanks to trials like the one I am on, I am hopeful that I have many more nights like that ahead. We will see what tomorrow brings, but today I am alive and that in itself should be enough for anyone, cancer or not."

diagnosis, along with the financial impact of not working, was a lot to handle. After going through chemotherapy and experiencing side effects such as mouth and nose bleeds, fevers and low white blood cell counts, in addition to nausea, his hope is that drugs like this can be fast-tracked for approval more often so that patients can receive it as a first-line therapy, which will enable them to continue to work and have a high quality of life.

"The last 2 ½ years are years that I didn’t think I would have," said Bob. "Once my wife and I got over the initial shock of the diagnosis, acceptance was key for me. I know the cancer may win eventually, but who knows when eventually will be. People ask me all the time, ‘how long do you have?’ and I ask them the same thing. No one knows for sure, I just have the knowledge that each day is a gift and should be lived to the fullest. I don’t dwell on the fact that I have cancer, I am lucky that I don’t feel sick and I still have a life to live."

Entering into a clinical trial was a no-brainer for Bob. The chemotherapy regimen was making him so sick that he couldn’t live a normal life, and his other options included removal of the lung, radiation therapy, or to do nothing. None of those options worked for Bob, who is a former long distance runner and an avid bird photographer. "A clinical trial gave me a chance to be alive," said Bob. "If it didn’t work, I knew it would be helping future generations, so it was a win-win in my mind."

Marianne Davies, DNP, ACNP, AOCNP, has taken care of several patients as part of this trial, including Bob, and commented, "Bob’s prior treatment was impacting his daily life, and was debilitating for him. On this trial he has experienced minimal to no side effects and his response has been great. It’s very rewarding to see him doing well and able to do the things that he loves."

Bob described the team at Smilow as a network that worked together to treat him and his cancer. He never felt rushed during his appointments or that there were questions he couldn’t ask of the nurses or doctors. "Everyone that you interact with knows you and knows your case. It made me feel very confident in the decisions that were being made."

Every 12 weeks Bob is scheduled for a CT scan to monitor any growth, and he receives his treatment once every three weeks. Even though Bob knows this is not a cure, he realizes that there is always something new in the pipeline, and that advancements are constantly being made. For lung cancer patients especially, Bob commented, this should provide a source of great hope. Bob’s other advice is to seek out a major cancer hospital that has the expertise for your type of cancer. "Not all oncologists are created equal or have access to these cutting-edge trials," said Bob. "It’s important to find someone that you can relate to as well, because hopefully you will be with them for a long time. Dr. Herbst explained everything to me and gave me honest answers. He knows how the drugs work and how to care for patients."

For Dr. Herbst, seeing a patient with advanced lung cancer doing so well is inspirational. He has come to know Bob and his wife very well over the years, something he could have only dreamed of when he first started seeing patients. "That just didn’t happen," said Dr. Herbst, "but thankfully that is changing. It is so satisfying to see translational research from Yale Cancer Center bringing new drugs from our labs to Smilow Cancer Hospital to help patients like Bob. With funding from our new Lung SPORE our goal is to figure out ways to help even more people."