

# cancer NEWSLINE

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>> Welcome to Cancer Newsline, your source for news on cancer research, diagnosis, treatment, and prevention. I'm your host, Lisa Garvin. Our guest today is Dr. John Heymach. He is the chair of the Thoracic Head and Neck Medical Oncology Department here at MD Anderson and also the co-leader of MD Anderson's Lung Moon Shot. Dr. Heymach, it seems like there are a lot of possibilities for immunotherapy with lung cancer treatment.

>> Really, the treatment of lung cancer has undergone a revolution in just the last year or two. In fact, if you were to look at how we treated lung cancer just two years ago, it would be unrecognizable compared to what we're doing today. The biggest change is immunotherapy has become the standard therapy for patients whose tumors have relapsed or recurred after chemotherapy. So for patients who tried chemotherapy first and it didn't work or the tumors started growing again. Now, immunotherapy is the standard. And, in fact, we have three new drugs that are approved in that space. All of these do something very similar which is they remove the blockade that exists between the tumor and the immune system. For a tumor to grow, it's got to find a way to suppress the immune system, and these drugs all basically remove that inhibition, so the immune system can start tackling the tumor again. Now, one of the things that's very exciting to us in the field is we're now moving this from being the thing you use after chemotherapy to now being what we call first line therapy. So this is now starting to be the first thing that patients get at least if their tumors make PDL1. So right now we consider if you walk in with metastatic lung cancer, the first thing we'll do is we'll check and see if you've got this PDL1 marker. And if so, we will not start with chemotherapy. We will usually start with immunotherapy unless there's an appropriate targeted drug.

>> So this really has turned lung cancer treatment on its head basically in just a short time as you've said. Because, typically, it's a surgical approach and then adjuvant therapy either being chemo or radiation. So it sounds like immunotherapy might support some of these treatment regimens.

>> Well, that's right. What I was describing is for metastatic disease when it's already spread. But now we're trying to move immunotherapy even earlier. So if it's an early stage cancer, where you're going to resect or give radiation to the tumor. Well, we know that even though you may remove all the tumor you can see, there's still about a 50 percent chance it's going to come back. So the question is can we reduce the chance it's going to come back by giving immunotherapy? So we have a clinical study called Neo Star where we give immunotherapy first, stimulate the immune system to tackle the tumor, and then we resect the tumor. We also have a study for patients whose tumors are a little more advanced when they spread to the lymph nodes in the center of the chest. We call that stage three lung cancer. And here we're taking the usual chemo and radiation that we give and adding immunotherapy on top of that. And we're particularly excited about using radiation with immunotherapy because radiation can kill cancer cells and then actually make it more visible to the immune system. So the same way that we

make chickenpox vaccine or we used to make a chickenpox vaccine by killing chickenpox then giving it to somebody and their immune system recognizes the dead virus and then attacks the live virus when it comes along. Here, we're trying to kill cancer cells and stimulate the immune system so that when live tumors are growing, the immune system can be attacking it more effectively. So as you can see from the beginning early stage lung cancer all the way to advanced lung cancer, we're really exploring what's the best way to integrate immunotherapy across the board.

>> What's the end game here? Is it increased survival? Is it cure? Is it stopping metastasis? What's the end point?

>> Well, it's the exciting thing about immunotherapy that even when it doesn't shrink the tumors dramatically, it helps people live a lot longer. And we think that's because once you stimulate the immune system to start fighting the cancer, it keeps doing it even after you stop the drug. So even if it doesn't slow down the cancer completely in a lot of cases by stimulating the immune system, you really slow its progress dramatically. Or prevent new metastatic tumors from going off and spreading. And that's the reason we want to move into earlier stage disease because right now we're only curing about half the patients where we cut out the tumor. And if we can harness the immune system to go out and find these little microscopic tumors that have escaped, we think we can dramatically increase the number of people we're curing.

>> So what do you see ten years on?

>> What I think is pretty clear is immunotherapy is going to be a major part of lung cancer therapy moving forward. It already is in the last year or two. And, in fact, I think you're going to see chemotherapy being used less and less and moved to later and later disease. I think what's going to happen when people come in the door is you're really going to be sorted into people who get what we call targeted drug. Those are often pills that target specific mutations like EGFR or ALK or RET or ROS, HER2, KRAS and so forth. And the other major approach will be immunotherapy if there isn't a targeted pill that's appropriate. And we're also looking at combinations of targeted drugs and immunotherapies. So we really have to work out over the next five or ten years is how do we use immunotherapy most effectively, what should we combine it with? Should we combine immunotherapy with other immunotherapy drugs like PD1 and CTLA4 inhibitors? Should we combine PD1 with targeted agents like EGFR inhibitors plus immunotherapy? Should we be combining radiation or surgery most effectively? So really you can view this as a big breakthrough has been made, and now it's up to the field to sort of work out the details about how to incorporate it across the board. But I have very little doubt that chemotherapy is going to become less and less of an important part in immunotherapy and more and more important part of lung cancer over the next five or ten years.

>> Great. Thank you very much. For more information, visit [MDAnderson.org](http://MDAnderson.org). Thank you have listening to Cancer Newslines. Tune in for the next episode in our series.

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