

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. Beth Mittendorf. She's an associate professor in surgical oncology here at MD Anderson. Our topic today is immunotherapy and its use in treating breast cancer. Dr. Mittendorf, immunotherapy is seeing early success in melanoma and lung cancer. How's it going with breast cancer?

>> So we're very interested in looking at ways to use a patient's immune system to fight breast cancer. As you point out, there have been some successes to date particularly in melanoma. And I think that as we think about the ways to apply immunotherapy and breast cancer, we have to think somewhat about the differences between breast cancer and melanoma. And so what I mean by that is melanoma is a tumor that's largely caused by mutations from the sunlight. Breast cancer's not as mutagenic a tumor, and so that has implications into how these immunotherapy strategies might be employed. So as an example of this in melanoma they're using checkpoint blockade which is taking the brakes off of T cells that are stimulated by the body's own immune system to fight the melanoma. Because we don't have as many mutations in breast cancer, we may not have as many T cells that are already activated. So in order for these drugs to work in breast cancer, it's possible if not likely that we'll need to do other things. Radiation, vaccines, cryoblation, chemotherapy, numerous strategies could be employed that will bring in T cells first and then take the brakes off. So we're excited about immunotherapy in breast cancer, but we have different challenges than our colleagues in some of these other disciplines where they've had initial successes.

>> Because we've identified at least two checkpoint inhibitors. CTLA4 and I believe PD1 is the other one?

>> Correct.

>> You're not exploiting these same pathways, then, it sounds like?

>> Actually, to some degree we are. So the trials that are ongoing in breast cancer that are furthest along with checkpoint blockade are looking at strategies to inhibit either PD1 or PDL1. There's been less work with anti CTLA4 in breast cancer, but our group here at MD Anderson is actually interested in employing that strategy in combination with anti PD1/PDL1 with a goal being to use the anti CTLA4, perhaps, to enhance the immune response and the anti PD1 to take the brakes off. So we are using those. I would like to suggest, though, that one thing that we should be aiming to do in breast cancer is looking at other strategies. So figuring out where the field is going as opposed to where it is. And so we're doing some work at our institution to try to identify other T cells stimulatory and inhibitory molecules that we could be targeting.

>> Because there could be dozens of checkpoint inhibitors out there.

>> I think there are. So there's not only inhibitors. So the way I think about this is the T cell when it's activated, it throws up some go signals and some stop signals. And we want to enhance those go signals. So there's a whole class of drugs that are going to further step on the gas. And so those are called agonistic anti bodies. And then there's the inhibitory molecules that put the brakes on the T cell which if you're having a response against the flu, it's good to not have that go out of control. But if your immune response is against the cancer, you want it to go. And so those are antibodies that are inhibiting those brakes, and there's a whole class of those. So you're right. I think the number you might have thrown out was a dozen, but I think it will be dozens by the time we learn all that we need to know about the T cells.

>> Are there certain types of breast cancer that are more amenable?

>> Right now, the emphasis has been on triple negative breast cancer. If you look at the available data, there is a suggestion that there is a T cell infiltrate into those tumors. Although, only about 15 to 20 percent. Our other types of breast cancer, of course, are HER2 positive and hormone receptor positive. There are some data to suggest that HER2 positive may also be a more immunogenic tumor and one of the therapies that we use routinely for those patients, trastuzumab, is a monoclonal antibody that does have immuno mechanisms of action. I think our real opportunities with our hormone receptor positive patients. Those are what we could call immunologically cold. And so back to my earlier comments that that's a group of patients, a very large group. Hormone receptor positive accounts for the majority of breast cancers, that could potentially benefit from some of these novel strategies we eluded to earlier to first stimulate a T cell response and then come in with some of these molecules that are either enhancing that response through stepping on the gas of a T cell or taking the brakes off.

>> Now, obviously patients are reading about it, hearing about it. If somebody's a breast cancer patient, how do they talk to their doctor about being treated with immunotherapy?

>> Yeah, that's a great question. I think immunotherapy is obviously of great interest to the providers as well as the patients. And so the providers are fairly knowledgeable about the ongoing trials. Certainly, our providers at MD Anderson are familiar with the studies that we have going on at MD Anderson which right now are primarily vaccine trials as well as a few of these studies we've already alluded to looking at checkpoint blockade. Another great resource for patients is clinicaltrials.gov. That has all of the available immunotherapy trials not only at MD Anderson but other studies available across the country.

>> Great. Thank you very much. For more information, visit MDAnderson.org. Thank you for listening to Cancer Newsline. Tune in for the next episode in our series.

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