

### Transcript Details

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Future Indicators for Early Breast Cancer: The Emerging Role of Autoantibodies

### Announcer Introduction

Welcome to *Project Oncology* on ReachMD. On this episode, sponsored by Lilly, we're joined by Dr. Pallav Mehta, who's the Director of Integrative Oncology and Practice Development at the MD Anderson Cancer Center at Cooper University Health Care. He's also the Medical Director and the Chief at the Division of Hematology/Oncology at Holy Redeemer Hospital and Medical Center in Meadowbrook, Pennsylvania. And he's here to talk to us about the emerging role of autoantibodies in the early detection of breast cancer. Let's hear from Dr. Mehta now.

### Mehta

So I want to say a few words about the emergence of autoantibodies and their role in the detection of early recurrence of breast cancer. As a medical oncologist, we follow our patients, often every few months for many years if not for the rest of their lives, as many of these patients have a difficult time going back to their primary care physicians and breaking the connection with us. So we have an opportunity and a real potential opportunity to detect recurrence and to detect it earlier. Unfortunately, the current testing that we have, which is routine bloodwork, imaging tests like CAT scans and bone scans, tumor marker tests – all of these are either not indicated or just not sensitive enough. I often tell patients at our follow-up visits, because this really is the number one question that I get, "How do I know that that woman is cancer-free?" I tell women that there are symptoms that they tell us, which is things they report to us, signs which are things I find when I examine them. There are bloodwork, which again, not overly sensitive, and then if any of those are abnormal, then imaging tests that are appropriate for that situation. But even with all of that together, often what happens is that we're looking for metastasis, but if metastasis already happens, it is generally considered incurable. So the holy grail of surveillance is to come up with a tool that allows us to better identify early recurrence, before these abnormal cells have had a chance to integrate into other organs.

So as I mentioned, bloodwork to date has looked at things like tumor markers. Tumor markers are by all of the major cancer organizations not recommended, as they are neither specific nor sensitive. They are useful in patients who already have metastatic breast cancer, but not in patients with localized breast cancer. So the technology of autoantibodies has emerged over the last ten years or so as a potential new tool to do this, and autoantibodies are really a unique way to try and detect recurrence. So instead of looking for the cancer cell itself, with things like circulating tumor cell technology, cancer markers, or just routine organ function testing, we're actually looking at the body's immune response to the cancer cell. So, in this case, we look for certain proteins, uh, that are relevant to the breast cancer. For example, something as simple as HER2. HER2 clearly is an important receptor in upwards of 20% of breast cancers, and if I have a patient, for example, who may have had a HER2 positive breast cancer, trying to look down the road for antibodies that she may have developed to HER2 could become a useful test to detect an early recurrence.

There are certainly challenges in doing this. Part of the challenge is the technology itself. Proteomics is likely the technology that is furthest ahead in detecting these antibodies, but the issue really becomes how we interpret those results. We know that when a woman has a breast cancer, she likely develops an antibody to that breast cancer. So then how do we use that antibody, both at the time of her diagnosis, and a month later, a year later or five years later to determine if the woman's cancer might be coming back. A lot of it speaks to the titer of those antibodies, the variability of the antibodies – are they changing over time? Are they showing up differently? Are other antibodies showing up in conjunction with it? We are now looking at panels of autoantibodies rather than one in particular, so this is a really exciting area of research, and I think a real unmet need in breast cancer. We've gotten much, much better at treatment of localized, treatment of metastatic breast cancer, and women are living longer than ever, and we are curing more women than ever. And I think as this increase in survivors really starts to take hold in breast cancer and cancer in general, it is incumbent upon us to try to come up with tools to see who really will be cancer-free for the rest of their lives, and for whom we can really use the term "cure."

**Announcer Close**

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