

Transcript Details

This is a transcript of an educational program. Details about the program and additional media formats for the program are accessible by visiting: <https://reachmd.com/programs/project-oncology/how-psma-scans-inform-metastatic-prostate-cancer-diagnosis-and-treatment/28641/>

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How PSMA Scans Inform Metastatic Prostate Cancer Diagnosis and Treatment

Announcer:

You're listening to *Project Oncology* on ReachMD. On this episode, we'll discuss the use of PSMA PET and CT scans in metastatic castration-resistant prostate cancer with Dr. Daniel Kwon. Dr. Kwon is an Assistant Professor of Medicine and an oncologist at the University of California, San Francisco. He's also a physician at the San Francisco VA Medical Center. Here's Dr. Kwon now.

Dr. Kwon:

The use of PSMA PET and CT scans—and actually, sometimes, MRI scans that they're paired with—has completely changed the diagnostic landscape for metastatic prostate cancer, and you see this happen in two situations. The first is when you have a person who's diagnosed with brand new prostate cancer, and based on a prostate biopsy, elevated PSA, or some initial CT or MRI imaging, there might be some suspicion that the cancer is more extensive than what we see. In that situation, a PSMA PET scan is super useful for ruling out distant metastases to make sure that the stage is accurate and we're treating the individual appropriately. And this is because PSMA PET scans are very sensitive compared to CT and MRI scans. They're functional. They target this molecule called prostate-specific membrane antigen, or PSMA, that's overexpressed in prostate cancer, and so this prostate cancer-specific functional PET imaging has changed that particular situation.

And then the second situation is when you have a biochemical recurrence after initial curative intent treatment with radiation or surgery. You see a rising PSA, and with a lot of the conventional imagings, you'd have to wait until PSA is a certain single-digit number. But now, with a PSMA PET scan, you can detect metastases and disease at a much earlier stage when a PSA is often just 0.2 or 0.5.

The role of PSMA PET and CT scans in treatment planning is crucial in terms of staging up front, like I just mentioned, but it's also very important in identifying candidates for PSMA-targeted radioligand therapies. So these are theragnostics or radiopharmaceutical treatments—lots of different names—in which you have a radioactive substance that's tagged to PSMA, and it's infused into the bloodstream. It's a type of systemic therapy in metastatic castration-resistant prostate cancer in people who have PSMA-positive prostate cancer based on a PSMA PET scan beforehand. And you do need to have prostate cancer that expresses PSMA, so you get a scan first, and depending on the disease setting, about 70–80 percent do have a positive PSMA PET scan. And if you do and you're in the appropriate clinical context, then you may be a candidate for these very promising therapies.

There are a number of limitations inherent to PSMA PET, CT, and MRI scans, and the limitations only grow. There are more in the specific use case of monitoring disease progression. Inherent to these scans, like any other scan, is that there are false positives and false negatives. So with false positives, you have situations where you have PSMA uptake, but there's not actually cancer there. There are actually plenty of other cancers that express PSMA, like melanoma, urothelial cancers, etc., and I personally have been tricked into thinking there is prostate cancer growing for somebody on treatment when it's actually metastatic melanoma. So it's important that you have that knowledge of false positives, have a curious mind, and biopsy lesions that are not consistent with the clinical picture.

You can also have false negatives, so that's where you miss things that are truly prostate cancer. And in terms of disease progression, the big problem is that a lot of cancers can transform into a type of prostate cancer with treatment pressure that not only produces less PSA, but also under-expresses PSMA and loses that expression, and so you're not able to pick up these prostate cancers on a PSMA PET scan anymore. So you have this false negative phenomenon. We also have other challenges like treatment flares where you can have greater uptake of PSMA PET tracers and bone metastases; that's not because the cancer is getting worse, but because the cancer is responding to treatment appropriately.

Announcer:

That was Dr. Daniel Kwon talking about using PSMA PET and CT scans to detect and assess metastatic castration-resistant prostate cancer. To access this and other episodes in our series, visit *Project Oncology* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening!