Attendees Questions and Panelist Answers

Advancements in Prostate Cancer
The Philadelphia Prostate Cancer Biome Project
Virtual Patient Symposium
Wednesday, November 11, 2020

Clinical Questions and Answers

When patients have elevated PSA levels, they typically have a biopsy of the prostate and they are provided with a Gleason score. Are there any new procedures or tests available to assist physicians in evaluating the severity and/or aggressiveness of the patient's prostate cancer?

The prostate biopsy provides tissue to diagnose prostate cancer and assign a "Gleason Score." Gleason score gives an assessment of the degree of aggressiveness of the cancer and is considered the "gold standard." Several newer blood (4K) and urine tests (Select MDx, ExoDx) have become available that do not diagnose prostate cancer but provide a percent chance of either having cancer or, more importantly, the risk of an aggressive life-threatening cancer. They do not replace the biopsy, but can be used in the decision-making process for prostate biopsy.

Is there a non-biopsy diagnostic option for low grade cancer diagnosis?

While several newer blood and urine tests mentioned in the answer above have become available that prove the odds of a low- or high-grade cancer, they do not replace the biopsy. Prostate cancer imaging such as MRI is reported to help with defining low grade cancer, however, none of these tests can be relied upon with 100% confidence.

How does this treatment (surgery) minimize sexual dysfunctions (problems getting and maintaining an erection)?

Assuming this refers to surgical removal of the prostate saving the nerves that run alongside the prostate is one aspect to minimizing sexual dysfunction. Penile rehabilitation (the use of pills or injections into the penis) after surgery may help some men recover. The same is true for radiation, where the use of pills and shots may help some men after radiation maintain an erection. Treatment of more advanced prostate cancer may involve lowering testosterone levels. Any treatment can negatively impact sexual performance and unfortunately for all these treatments is commonly seen. There are many options urologists can offer to help with loss of sexual function.

What is the ideal biomarker to watch?

There is no question that the PSA blood test is the most reliable test in all of cancer types to watch in men treated for prostate cancer. Low or undetectable numbers that stay that way are all good news for cancer remission. Rising PSA after treatment, in particular if rapidly rising, suggests the return of the cancer. PSA for screening is not as reliable marker for the development of prostate cancer but is the most commonly used. While there are limitations when PSA is used for screening it clearly has been a major step forward in helping to detect prostate cancer at its earlies and most treatable stages.

Since I have had a few biopsies already, and have low grade cancer, is there a therapy other than a repeat biopsy?

It appears that you are being treated by active surveillance that involves monitoring with periodic biopsy. At this point the standard treatment for early non-aggressive cancer can be either surgery or radiation. There are several experimental treatments under study, but no standard of care at this time.

What are Jefferson's thoughts on the role of complementary medicine as it relates to surviving prostate cancer?

Alternative and complimentary approaches can help with the recovery from prostate cancer treatment. Healthy lifestyle and a heart healthy diet are standard recommendations. There are no specific complementary medications that are commonly used. Mindful-based therapy and other management such as yoga can all help with the recovery. There is some scientific literature that acupuncture can help with hot flashes due to hormonal therapy. We have the Myrna Brind Center for Mindfulness that can be consulted for further information.

Research Questions and Answers

Dr. Rodriguez-Bravo, the concept that prostate cancers lose sections of chromosomes is intriguing. What are the next steps for your group in studying these groundbreaking observations?

Thank you for your question. That is actually a very spot-on one, since this exactly what my lab is investigating thanks to the generous support of the Philadelphia Prostate Cancer Biome Project. If I may, I will get a little bit more into the details of what we do. One fundamental unanswered question when it comes to chromosomal instability (also called CIN) is related to a biologic paradox. We know very well, because it has been shown by many labs, that cancer cells cannot sustain high amounts of chromosomal defects, as this is detrimental to their survival and leads them to cell death. However most human tumors display different degrees of chromosomal errors like aneuploidies (wrong chromosome number) or CIN (increased rate of chromosomal gain and loss in every cell division). And prostate cancer is no different, as we know CIN increases during disease progression and that aneuploidy detected in primary localized prostate correlates with more chances of developing lethal disease. How tumor cells do that? If high CIN levels are deleterious to

cancer cells, how aggressive prostate cancer cells cope with this and are able to metastasize, lead to grow tumors in distant organs and ultimately kill patients? We believe tumor cells learn to adapt, as species have adapted during evolution during millions of years. Our lab is studying all the genes that are turned on and off differently to adapt to high CIN. We use cell experimental models and in vivo (mice) models to do that, we measure CIN in them before and after genetic modulations and evaluate their chances of survival. What we are finding is that there are specific genes and proteins to which aggressive prostate tumor cells are "addicted" to be able to survive with high chromosomal aberrations. Therefore, the next steps are to define the specific genes and proteins involved in these adaptive responses and use pharmacological inhibition (with currently existing small molecules) to target them. We think that these investigations will allow us to test new therapeutic strategies that exploit vulnerabilities related to CIN to eliminate lethal prostate cancer cells. Our preliminary results are very encouraging. I hope this answers your question. Thank you again for your interest in our research.

Learn more about Dr. Rodriguez-Bravo's and all pilot award research here.

Why is the Department of Defense funding prostate cancer research?

The Department of Defense funds prostate cancer research because prostate cancer is more prevalent in men that have served in the military than in the general population.

If it is known that bone is a particular target for traveling prostate cancer cells, is it known how to slow down or stop the migration of prostate cancer cells to the bone?

Currently, there is no FDA approved drug that prevents prostate cancer cells from traveling to the bone. This is an unmet need that needs to be addressed. Here at the SKKC we have investigators that are trying to determine the molecular factors that participate in the crosstalk between the bone and the cancer cell.

Watch Dr. Karen Bussard explain her efforts to resolve this important issue in a video here.

Genetics Questions and Answers

My father, brother and I have prostate cancer, should I suggest my 30-year-old son be genetically tested to see if he is a latent carrier? I am well aware that prostate cancer has a high hereditary link, so... is genetic testing ready for prime time?

You should undergo genetic testing first. If you have a mutation, then your son should be tested. Yes, genetic testing is ready for prime time. We have two studies that have free genetic testing where we are evaluating the best way to deliver genetic counseling.

I was diagnosed with prostate cancer, followed by surgery, radiation, and later by hormone therapy. At what age should my son (43) get genetic testing to determine his susceptibility to prostate cancer?

You should undergo genetic testing first. If you have a mutation, then your son should be tested. We have two studies that have free genetic testing where we are evaluating the best way to deliver genetic counseling.

What are the current percentages for the likelihood of contracting prostate cancer in each of three cases:

1) no history in either the father or mother's side
2) PCa in one of the two parental branches
3) PCa in both parental branches

These are not straightforward questions to address. There are studies that look at relative risks for prostate cancer based upon family history of prostate cancer or other cancers. Having brothers with prostate cancer at any age is associated with approximately 3-fold increased risk. Having father with prostate cancer associated with approximately 2.3-fold increased risk. Having two or more first-degree relatives with prostate cancer (father or brothers or sons) is associated with over 4-fold increased risk for prostate cancer. Having uncles or grandfather on either side of the family confers approximately 2.5-fold increased risk.

My husband was diagnosed in 2013 at age 50 and had undergone genetic testing in your office several years ago; he tested negative for BRCA1 & BRCA2. Should he retest for new gene updates?

Sure, we would be happy to see him, review his prior results, and see if updated testing is indicated.

I've had surgery, radiation, and have undergone one cycle of ADT. My PSA is currently 0.4. I had a Caris report generated from my biopsy samples. Does the Caris report provide the same information to my Jefferson medical oncologist (Dr. Kelly) as the genetics program just discussed or is there value in having genetics test from Jefferson?

Caris testing gives genetic information from the tumor, not inherited genetic mutation information. The genetics program evaluates for inherited genetic mutations. From your history, you would qualify for free genetic testing through our genetic studies.

What is the next frontier for genetic testing, and implementing more broadly?

There are multiple avenues for the next frontier: Expanded genetic testing; RNA testing; determination of role of polygenic risk scores; use of technology to disseminate genetic counseling for informed decision-making for genetic testing; and testing of diverse populations for greater knowledge across populations.

Please email Laura Gross (Laura.Gross@jefferson.edu) if you are interested in genetic studies and to learn more about the genetics program.

Miscellaneous Questions and Answers

Is it MBSR or MDSR and where can I participate in that?

The program is Mindfulnes based Stress Reduction (MbSR) and it's coordinated through our SKCC Welcome Center and hosted by the Myrna Brind Center for Mindfulness. Additional resources can be found at (https://hospitals.jefferson.edu/departments-and-services/mindfulness-institute.html)