

Top 10 prostate cancer research stories from 2019

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Our first blog this year describes the top 10 prostate cancer research stories from 2019, as judged by PCFA staff:

1. A new surgical technique is capable of restoring sexual function in some men after prostate surgery

A significant proportion of men have erection problems after prostate surgery. Although there are drugs and devices that can help improve this condition, there remain thousands of Australian men with long-term impotence who are not helped by these options. A [new surgical technique](#) is now being tested at one centre Australia to restore sexual function for men after prostate surgery.

The first study of this technique is now completed and [published in a top international journal](#). Seventeen men had the experimental nerve-grafting surgery. Twelve of them were eventually able to experience an erection with sufficient firmness for full penetration. Seven out of these 12 patients didn't need Viagra-like drugs for an erection to happen. Of the 12 men, two had suffered erectile dysfunction for over ten years. The study predicted that the new surgery had a 60 per cent success rate.

NB Professor Coombs and Dr Dangerfield offer this operation in private practices. PCFA promotes peer reviewed research and does not act as a coordinator of any research featured in this article. If you have any questions regarding this procedure, please get in touch with the clinicians directly.

2. Olaparib may become the first precision medicine for prostate cancer

Olaparib (Lynparza) is a breast and ovarian cancer drug that is being trialled for prostate cancer patients. Promising results from the PROfound trial have recently been [reported at a European conference](#). Olaparib is designed to target prostate tumours with alterations in DNA repair genes. Ideally, a DNA test (through blood or tissue samples) could be used to identify men for whom treatment will be effective.

Results from the PROfound trial show that [Olaparib](#) delayed the growth of prostate tumours by about four months. The men joining this trial had metastatic cancer and alterations in

DNA repair genes. Longer follow-up of this trial will hopefully show that Olaparib improves survival times for these men. Success in this trial will pave the way for approval of Olaparib as the first precision medicine for prostate cancer.

3. Life for Australian men in the 10 years after prostate cancer treatment

A [ten-year Australian study](#) has shown that localised prostate cancer has a major effect on the lives of men for many years. Men who have been treated for this cancer live longer, but they are not all living well.

Results from this study showed that by 8 years after diagnosis, urinary function started to decrease, whereas sexual function increased a little. Unsurprisingly, men who had better sexual, urinary or bowel function reported a better quality-of-life. Bowel function had larger effect on quality-of-life than sexual or urinary function for the men in this study. These findings show the importance of these treatment side effects and symptoms for the life satisfaction of these men.

While 95% of men are likely to survive at least five years after diagnosis, one in four will subsequently experience anxiety and up to one in five report depression.

PCFA recently released the Australian-first [Position statement on screening for distress](#) and psychosocial care for men with prostate cancer, which aims to address and raise awareness of the daily struggles that accompany a diagnosis.

PCFA Chief Executive Prof Jeff Dunn believes health service providers and policy makers need to prioritise and fund new models of care to help transform the way Australia manages prostate cancer.

4. Keytruda benefits a small proportion of men with metastatic prostate cancer

Keytruda is an immunotherapy drug that has greatly improved survival times for some cancers. Keytruda can restart a blocked immune response, allowing the cells own immune system to fight against tumours. Unfortunately, Keytruda has not been a very successful treatment for prostate cancer so far.

A new study has some [hopeful results](#). Results showed that a small proportion of men with late-stage prostate cancer will benefit from Keytruda. When men whose tumours had specific gene alterations were treated with Keytruda, 15% saw their tumours remain stable or decrease in size. Unfortunately Keytruda brings a risk of numerous side effects such as low energy levels and skin rash. Researchers hope that a combination of Keytruda with other treatments will make it a more effective treatment for late-stage prostate cancer.

5. IsoPSA given “breakthrough device” status by the FDA

The PSA blood test for prostate cancer is not optimal. Around three quarters of men with a high PSA don't actually have prostate cancer and the test also misses many true cases.

IsoPSA is a new type of blood test that analyses PSA protein changes. The company developing this test have shown that it's more accurate for detecting high-grade prostate cancer than the current PSA test in a clinical trial. According to trial results, IsoPSA could have avoided 47% of prostate biopsies.

The US Food and Drug Administration (FDA) has recognised the potential of this new test. In October 2019, they granted “breakthrough device” status for the [IsoPSA test to detect prostate cancer](#). This status means that the FDA will work with the company to quickly review their application for approval. Approval in the US will hopefully mean a better test for prostate cancer is on the way to Australia in the future.

6. The FOXA1 gene is an important driver of prostate cancer formation and growth

When two articles are published in one of the world's top scientific journals, Nature, we know that something exciting is going on. Scientists from two different laboratories have discovered the mechanisms by which a gene called [FOXA1 drives prostate cancer](#) formation. FOXA1 is therefore a potential target for new drugs to block growth of prostate cancer.

The results from one of these studies found three different classes of FOXA1 gene mutation that promoted tumour growth in different ways. The [University of Michigan press release](#) usefully describes these classes as fast, furious and loud.

FAST: These gene mutations increase the rate by which cancer-promoting genes are used. Fast gene mutations are seen in early stage prostate cancer and are likely what triggers the disease.

FURIOUS: These changes to DNA causes a portion of the FOXA1 molecule to be cut off. These mutations are found in late stage, aggressive prostate cancers. They promote spreading to distant sites by metastasis.

LOUD: They involve structural rearrangements of the FOXA1 gene. This increases the amount of FOXA1 protein produced. More FOXA1 protein means a stronger influence on prostate cancer tumour growth.

7. New radiotherapy techniques mean fewer visits to the clinic in the future

Radiotherapy for prostate cancer is constantly being improved. Some of these modifications involve giving a higher dose of radiation over a shorter time-period. Although the overall

benefits are similar, this reduces the number of treatments for patients and frees up healthcare resources.

A [new clinical trial](#) has compared the current standard radiotherapy to a new type using less visits. The new radiotherapy is called ultra-hypofractionation, but also known as SBRT or SABR or Cyberknife. Men joining the trial had localised prostate cancer considered intermediate risk. Standard radiotherapy for these men consisted of 39 treatments (5 days a week for 8 weeks). Men having ultra-hypofractionation received 7 treatments of higher dose (3 days a week for 2.5 weeks).

After a 5-year follow-up, the trial showed that the shorter treatment worked equally as well. There was no difference in survival rates between the two groups. There was a small increase in bowel and urinary side effects near the end of the treatment, but not in the long term. Shorter treatment times are therefore an alternative for some men with localised prostate cancer, but will not be appropriate for all men.

8. Apalutamide improves survival times for men with metastatic prostate cancer when used with hormone therapy

Apalutamide (Erlyand) is a new drug that is being developed for advanced prostate cancer. The [TITAN clinician trial](#) tested whether it was beneficial to add Apalutamide to hormone therapy for men with metastatic prostate cancer.

The men joining the TITAN trial had prostate cancer with tumours spread to distant sites such as their bones. These men were currently taking hormone therapy. Men who added Apalutamide to their hormone therapy survived for a longer period of time. They were less likely to see their cancer spread or PSA levels rise. The good news is that adding Apalutamide did not lead to increased side effects, with the exception of a higher chance of a rash. Hopefully these good results will lead to approval for Apalutamide use in Australia for these men.

9. Promising results from the Enzamet clinical trial

<https://onlinecommunity.pcfa.org.au/research-blog-directory/good-results-from-the-enzamet-clinical-trial>

Enzalutamide (Xtandi) is a medicine that helps men with metastatic prostate cancer live longer. A large clinical trial run by [ANZUP](#) has now shown that Enzalutamide improves survival times if taken at an earlier stage, with hormone therapy. Over 1000 men joined this trial. Adding Enzalutamide to their hormone therapy increased survival times. They were also less likely to see their PSA rise and new tumours on scans. But unfortunately adding Enzalutamide to hormone therapy brings a higher risk of side effects. The effects of Enzalutamide on survival were not as strong for men taking chemotherapy, and these men

experienced more side effects. But for men who didn't yet need chemotherapy, Enzalutamide with hormone therapy was beneficial.

10. Australian company Noxopharm report promising results from an early trial of Veyonda

Veyonda is a drug that is being developed by an Australian company called Noxopharm. Noxopharm hope that Veyonda will make other prostate cancer treatments more effective. Veyonda targets an enzyme that is vital to the growth of cancer cells. Treatment with Veyonda aims to leave the cancer cells highly vulnerable to other treatments such as radiotherapy and chemotherapy.

Noxopharm have announced promising [results from their pilot trial of Veyonda](#) combined with radiotherapy for men with late-stage advanced prostate cancer. This small trial tested recruited 14 men as volunteers. 57% of these men (8 out of 14) benefitted from a combination of Veyonda and radiotherapy with stable disease or better by 6 months. 43% of men experienced substantial pain relief from treatment. These good results should see Veyonda enter larger trials to test its benefits for men with late-state prostate cancer.