

Prostate cancer's changing landscape

Exciting advances in diagnosing and treating prostate cancer are game changers

Twenty-five years ago when a man was diagnosed with cancer of the prostate, the walnut-sized gland that is part of the male reproductive system, his options were quite limited: radiation therapy or surgery. If the cancer had spread outside the prostate, then the treatments were chemotherapy or one of a small handful of hormone therapy drugs. But over the past quarter century, advancements in diagnosis, treatment and life-extending drugs have been moving at such a pace that the whole landscape for prostate cancer has changed.

And that's nothing but good news, considering that prostate cancer is the most commonly diagnosed cancer among Canadian men – one in seven men will be diagnosed with the disease.

Consider that 25 years ago, when the PSA test – a simple blood test that detects the levels of a prostate-specific protein – started to be used to detect prostate cancer, more men were diagnosed and therefore, more men were treated.

But since then, a Canadian-led innovation called "active surveillance" has meant that men with prostate cancer who are deemed at low risk for the cancer progressing, or metastasizing, are being closely monitored rather than treated.

"This was revolutionary because 25 years ago, if someone was diagnosed with a cancer, there was a great deal of urgency to remove it," says Dr. Stuart Edmonds, vice-president of Research, Health Promotion and Survivorship at Prostate Cancer Canada. "But removing the cancer immediately isn't always necessary if it's slow-growing. Active surveillance allows men to avoid the potential side effects of unnecessary treatment, which can drastically decrease their quality of life."

The PSA test remains valuable not just as a red flag for prostate problems but as a way of determining the growth of the cancer once it's been diagnosed. The test is an essential tool to calculate "doubling time" – how long it takes for a PSA number to double – which could indicate the aggressiveness of a tumour and influences a doctor's decision about the best course of treatment.

And that's even more critical now



as there are new treatments for advanced forms of prostate cancer. "We can actually treat men much earlier, and the only way to know when is if we actually see the PSA levels rise in a more pronounced way," Dr. Edmonds explains. "The PSA is a really good indicator of when new treatments should be used."

Other developments have led to greater accuracy in diagnosis. So-called multiparametric MRIs are now used for targeted biopsies rather than systematic biopsies. And the last several years have seen an explosion of other biomarkers of the disease, found anywhere from saliva to tissue. That additional information helps doctors select only those men who need biopsies, cutting down the number of unnecessary procedures.

Surgery and radiation – still the primary ways to treat a localized prostate cancer – have also dramatically improved. Both newer surgical techniques and robotically assisted techniques may minimize side effects – incontinence and/or erectile dysfunction – and enhance recovery. Similarly, more targeted radiation techniques, such as brachytherapy, in which a radioactive seed is implanted in the prostate, may minimize side effects by not damaging surrounding normal tissue.

"There have been massive leaps in the last 10 years," says Dr. Bobby Shayegan, associate professor and head of urology at McMaster University in Hamilton, Ont. "Advances

in surgical and radiation therapies for earlier stages of disease have improved the patient's journey, but they have not necessarily made a gigantic dent in their ultimate survival."

By far the biggest developments have come from the introduction of drugs for advanced disease. Because prostate cancer is hormonally driven in its earlier stages, depriving it of male sex hormones, like testosterone, has been the cornerstone of therapy.

And that usually works for a variable period of time, ranging from months to many years, says Dr. Shayegan.

Eventually, however, the cancer learns how to circumvent that environment and it spreads. Fifteen years ago, a man's chance of survival at that stage was dismal – 24 months at best, he adds. But more advanced hormonal therapies are proving to extend survival and are better tolerated than previous therapies for the same stage of disease.

Equally exciting are the new drugs for men whose cancer is advancing and is resistant to testosterone deprivation, but has not yet spread outside the prostate.

As recently as 14 months ago, there was nothing for men at this stage, called non-metastatic castration-resistant prostate cancer. However, these men were understandably anxious waiting and watching PSA levels rise while clinicians' hands were tied.

One in seven Canadian men will be diagnosed with prostate cancer. Advancements in testing and treatment over the last 25 years mean a man's chance of survival has been greatly improved.

PROSTATE CANCER FACTS (FROM PROSTATE CANCER CANADA)

- In 2017, more than 21,000 Canadian men were diagnosed with prostate cancer; over 4,000 men died from it.
- The death rate from prostate cancer has dropped 50 per cent per year in the last 25 years.
- Early detection is key: when detected early, survival is close to 100 per cent. Those chances decrease to 1 in 4 if not detected early.
- Risk increases if you: are over the age of 50; have a family history of prostate (and possibly breast/ovarian) cancer; are a black man.
- Symptoms include: frequent urination (particularly at night); difficulty urinating; painful ejaculation; blood in urine or semen. However, typically, there are no symptoms at all during the early stages of the disease, when it is most easily treated.

"Subsequently, different classes of drugs all came in a frenzy and rapidly changed the landscape for men facing such a situation," he says.

"And those drugs were also shown to be very effective when used prior to obvious disease spread in men with castration-resistant disease."

The keyword with prostate cancer is "early." By the time David Bender was diagnosed at the age of 62, his cancer had spread beyond the prostate and was aggressive. In the 13 years since, he has endured surgery, radiation, chemotherapy and all the unpleasant and sometimes life-altering side effects that came with them.

"Your life is going to the hospital – treatment knocks the crap out of you and then you go home and sleep," says Bender. "But if you're on top of it and get it at stage 1, prostate cancer won't take you out. It can be treated."

While specialists are still struggling to cure prostate cancer, advances in the past 25 years have prolonged lives by five years or more. "While that may not seem a lot," says Dr. Edmonds, "it means they can enjoy longer lives and it leaves the window open for new therapies to come onto the market."

To learn more, go to [Prostate Cancer Canada's website at prostatecancer.ca](http://ProstateCancerCanada.ca).

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