



# KELOWNA PROSTATE CANCER SUPPORT & AWARENESS GROUP

*Contact information – Email – [sbren@telus.net](mailto:sbren@telus.net)*

*Phone – 250-762-0607*

*[www.kelownaprostate.com](http://www.kelownaprostate.com)*

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**O**ur guest presenter at our Support Group meeting in May was **Michael Lamey**, one of 8 Medical Physicists at BC Cancer Kelowna. The role of a Medical Physicist is very involved, for example the Medical Physicists at BC Cancer Kelowna are involved in many aspects of radiation therapy, including planning, safety, education, research and machine quality assurance.

Michael discussed and showed us some of the many aspects, and steps taken in radiation planning that a Medical Physicist, and other professionals are involved in, prior to the commencement of a patient receiving radiation treatment. It was extremely interesting to see how every patient is individually assessed. Michael indicated that these multiple steps are used prior to external beam radiotherapy as well as with both Low Dose Rate (LDR) Brachytherapy and High Dose Rate (HDR) Brachytherapy. Michael mentioned that the medical professionals involved in the planning aspect of radiation prior to the commencement of treatment, included the Radiation Oncologists, Planners, the Medical Physicists as well as very sophisticated computer software and other hardware.

Michael went on to talk about the use of External Beam Radiation Therapy and how the newer type of Linear Accelerators (Linacs) are used in order to control the growth of the tumour while minimizing exposure to the surrounding normal tissue. The aim of radiation therapy is to eradicate a patient's cancer. The newer Linacs at BC Cancer Kelowna offer precise precision with a wide array of imaging components including cone-beam CT, rigorous precision with a variety of multileaf collimators, to mention just a couple of items. Michael mentioned that the gantry on two of the newer Linacs are continuously moving around the patient at 6 degrees per second and the gantry on one of Linacs moves at 4.5 degrees per second. He also mentioned that the multileaf collimators are continually moving in order to minimize radiation exposure to surrounding normal tissue and other organs.

This was an extremely interesting and educational presentation and gave everyone present an inside look at how each patient is individually assessed, and the number medical professionals involved, and the many steps that are taken prior to a patient being treated.

## Biochemical Recurrence of Prostate Cancer -

The following is by Dr. Charles E. Myers, Jr. M.D. and came from the publication *Prostatepedia*.

If surgery has successfully removed the prostate gland, the only source of PSA will be surviving cancer cells. After radiation, there can be normal prostate cells in addition to cancer cells, however, prostate cancer cells differ from normal prostate cells because the cancer cells are able to grow in a particular manner. Cancer cells grow by doubling: 1 cell becomes 2; 2 become 4; 4 become 8. Cancer cells do this at a constant rate.

For example, if the cancer cells double every year, then on subsequent years, the number of cancer cells would be 1, 2, 4, 8, 16, 32, 64, 128, 256, and so on. As a general rule, it takes 15 doublings to go from 1 cancer cell to a mass 1 centimeter across. At 1 centimeter, cancer masses generally become detectable by CT scan. As a rule of thumb, it takes another 15 doublings to reach a lethal cancer burden.

The implication is that half of the cancer growth occurs below the level of detectability.

Unlike most cancers, our ability to follow prostate cancer is not limited to imaging tools like the CT or bone scans. We have PSA as a biochemical marker that can be used to follow the cancer. The PSA is a

much more sensitive indicator of cancer presence than both CT or bone scan and can indicate the presence of recurrent cancer months to years earlier.

In most patients, the PSA level is roughly proportional to the size of the cancer mass: if the cancer doubles in size, the PSA will double. Thus, the PSA doubling time is thought to provide an estimate of the cancer doubling time. PSA doubling times faster than 3 months usually indicate rapidly growing disease associated with short survival unless treated aggressively. PSA doubling times slower than 9 months usually indicate much less aggressive cancers. PSA doubling times greater than two years are associated with prostate cancers that can take a decade or more to cause metastases detected by the scans.

As a result, it is common to see men after surgery or radiation who have an increasing PSA, but no other evidence of disease. In those patients, PSA doubling time represents the only well established tool to determine the aggressiveness of the cancer and how soon metastatic cancer might manifest itself.

PSA, however, provides no information about the location of the cancer. Is it present in bone, lymph node, liver or lung? The recent advances in Pet scans mean that the cancer can now be detected while it is much smaller than would be the

case with CT or bone scan. However, clinical trials have yet to prove this early detection improves the outcome of treatment.

Finally, there is the problem of late relapses. After surgery, patients can have an undetectable PSA for years - even more than a decade - and then recur. What was going on during that silent interval and what changed to trigger recurrent cancer? This phenomenon is called dormancy.

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## WITT'S WIT (ON THE LIGHTER SIDE) -

### How Children Perceive Their Grandparents -

1) - My young grandson called the other day to wish me Happy Birthday. He asked how old I was, and I told him, 80. My grandson was quiet for a moment, and then

He asked, "Did you start at 1?"

2) - A Grandmother was telling her little granddaughter what her own childhood was like. "We used to skate outside on a pond. I had a swing made from a tire; it hung from a tree in our front yard. We rode our pony. We picked wild raspberries in the woods."

The little girl was wide-eyed, taking this all in. At last she said, "I sure wish I'd gotten to know you sooner!"

## Treatment Gives New Hope for Advanced Prostate Cancer -

The following was obtained from Personal Health News and originated with Prostate Cancer Canada - by Dr. Stuart Edmonds and Dr. Fred Saad.

**P**rostate cancer is the third leading cause of cancer death in Canadian men. "Approximately one in seven Canadian men - or just over 21,000 - were diagnosed with prostate cancer in 2017 and about 4,000 of them died from the disease," says Dr. Stuart Edmonds, Vice President of Research, Health Promotion, and Survivorship at Prostate Cancer Canada.

While Survivor rates are extremely high when prostate cancer is diagnosed early - close to 100% five years after diagnosis, they diminish when the disease is discovered in later stages. However, thanks to recent treatment discoveries and innovations, Canadian men diagnosed with advanced prostate cancer have reason to be more hopeful and optimistic. "These discoveries have led to a number of different options that can extend lives considerably," says Dr. Edmonds.

### Hormonal therapies offer hope

Historically patients diagnosed with advanced prostate cancer that had spread to other parts of the body were treated with hormonal therapy known as androgen deprivation therapy (ADT). "Prostate cancer depends on testosterone to thrive so if you cut off the source of testosterone, patients can go into remission, sometimes for several years," says DR. Fred Saad, Professor, Chief of Urology, Director GU Oncology at the University of Montreal Hospital Centres.

Unfortunately, many of these patients experience a recurrence after a couple of years on the androgen deprivation therapy - a condition known as metastatic castration-resistant prostate cancer. Chemotherapy, a new form of targeted radiation therapy, and a new generation of oral targeted hormonal treatments are helping men who have castration-resistant cancers experience longer and better lives. "There's a lot more we can offer these patients now, so the chances of having our patients live longer has gone up tremendously over the past few years," said Saad.

These new hormonal drugs can significantly increase survival and quality of life. "They act by targeting the androgen receptor that stimulates the cancer to grow and are easier for patients to tolerate," says Dr. Saad. In addition to being used in patients with advanced cancers, these new targeted hormonal therapies can be used to treat patients who are at high risk of becoming metastatic by preventing or delaying metastases. "it's a huge change in the way we view prostate cancer," says Dr. Saad.

#### **PSA test more than a diagnostic tool**

The prostate-specific antigen (PSA) test is a valuable tool for both early detection and determining which men living with prostate cancer are more likely to have an aggressive form of the disease. "PSA has a role in diagnosis, and an even bigger role once we treat the patient since PSA should go down and stay down. If patients recur, PSA allows us to detect this early and helps to decide how and when to treat based on how fast the PSA goes up. This is the best predictor of what will happen to the patient." says Dr. Saad.

The PSA test, in combination with the grade of cancer, is also a way to help avoid overtreatment of low-risk patients. "We want to be able to identify and treat the cancers that men will die of, as opposed to die with, and the PSA is a great entry point for doing that," adds Dr. Edmonds.

Wherever they are in their prostate health journey, men - especially those between the ages of 50 and 70 who are at an increased risk - should speak to their doctor about getting tested.

The Kelowna Prostate Cancer Support & Awareness group does not recommend treatment modalities or physicians: However, all information is fully shared and is confidential. The information contained in this newsletter is not intended to replace the services of your health professionals regarding matters of your personal health.

*The Kelowna Prostate Cancer Support & Awareness Group would like to thank Janssen - and TerSera for their support and their educational grants towards our newsletters and our support group.*



#### **UP COMING MEETING DATES FOR 2019 -**

**Sept. 14th, Please Note No Meetings July or August - We hope everyone has a great Summer and we will see you in September.**

#### **Meeting Location:**

Our meetings take place in the Harvest Room at the Trinity Baptist Church located at the corner of Springfield Rd. and Spall Rd. enter through the South Entrance. The meeting begins at 9:00 A.M. Doors open at 8:30 A.M. There is elevator access if needed



