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Prostate Cancer Canada Network Calgary

Officers of the Society:

President
Steve Belway
403 818 9957
steveb@pccncalgary.org

Secretary
Ron Singer
rysingerca@yahoo.ca

Treasurer
Bill Moir
billm@pccncalgary.org

Executive Director
Stewart Campbell
403.455.1916
sjcampbell_ltd@shaw.ca

Warriors
Jim Swaile
403.271.1288
jswaile@telus.net

Chaplain
Bobbie Osadchey
403.719.5755
bobbie0@shaw.ca

Visit us at:
www.pccncalgary.org

PCCN Calgary
PO Box 72126
RPO Glenmore Landing
Calgary, Alberta
T2V 5H9
403 455 1916

In this issue:

Changing of the Guard

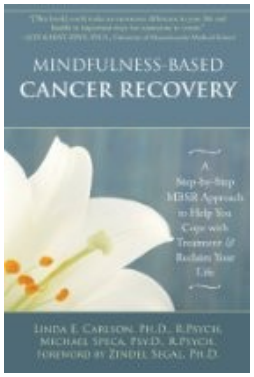
After 15 years of service, as a member, director, president and executive director of PCCN Calgary (Prostaid Calgary), **Bob Shiell** is retiring from his current position as Executive Director. During Bob's involvement he produced most of the 173 editions of the Digital Examiner; the newsletter he started, was responsible, 10 years ago, for our group achieving status as a registered charity; created our mascot, Dr. Digital; served as media spokesperson; engineered multi-media advertising campaigns promoting early detection and our group; delivered the early detection message to groups and organizations across Alberta and helped raise thousands of dollars in donations from individuals, groups and companies.

Our new executive director, **Stewart Campbell** is no stranger to PCCN Calgary, being a board member and chairman of the PCCN Calgary Warriors since 2008. A scientist by training, Stewart has a PhD in Chemistry from the U of A and an MBA from the University of Calgary.

His incredible prostate cancer knowledge base and enthusiasm for helping men and their families on their journey will be a tremendous asset as we move forward. Please welcome Stewart as he assumes his new position February 1, 2014.

Our February 11 meeting: 7:30 PM @ Kerby

Dr. Michael Speca, Clinical Psychologist Tom Baker Cancer Centre. *"Role of Mindfulness in Cancer Recovery and Living Your Best Life"* .



Custom-Fit Treatments for Prostate Cancer

In a bid to improve treatment for men with high-risk prostate cancer, some researchers want to take a page from the playbook for breast cancer.

Medical scientists are working to develop strategies for treating prostate tumors that are tailored to individual patients, as is currently done for many women with breast cancer. Fresh advances in the understanding of prostate cancer suggest that some men with a high-risk form of the disease might benefit from more aggressive treatment.

Other men may benefit from less treatment. For instance, radiation plus hormone therapy, also called androgen-deprivation therapy, is a common strategy to kill prostate tumors. But a recent study from researchers at Memorial Sloan-Kettering Cancer Center suggests that analyzing a tumor's DNA may identify patients who would do just as well with radiation alone. If borne out in further re-

search, some men may be able to skip hormone therapy, avoiding side effects that include loss of libido and heart disease.

The developments come amid changes in the way many types of cancer are identified and treated. The changes are being driven in part by the use of genomic information that defines tumors by their underlying biology and provides clues about drivers of the disease not available by conventional exams.

Researchers say, for instance, that several new genomic prostate-cancer tests can help separate high-risk tumors from those at low or intermediate risk, offering information to doctors and patients to guide treatment choices.

About 240,000 men in the U.S. are diagnosed with prostate cancer each year. Most cases are low-risk forms of the disease that will have little effect on their lives or longevity. In these cases, a big concern is that over treating the cancer puts these men at unnecessary risk for impotence, incontinence and other complications.

About 20% of diagnosed men are considered at high risk for having their cancers spread beyond the prostate gland based on a measure called the Gleason score and other factors. For some men with an aggressive form of the disease, the 10-year-survival rate is well below 50%. "We may not be treating them aggressively enough," says William Polkinghorn, a radiation oncologist at Memorial Sloan-Kettering, in New York.

Some 95% of men who die of the disease are initially diagnosed with cancer that is confined to the prostate region, says Philip Kantoff, director of the Lank Center for genitourinary oncology at the Harvard-affiliated Dana-Farber Cancer Institute, in Boston. Finding ways to "cure" such patients is "mission central," he says. Once cancer spreads beyond the prostate—typically to the bone—it is considered incurable.

The current standard of care for high-risk prostate cancer is either surgery to remove the cancerous gland or radiation plus hormone therapy to kill the tumor. Some men get radiation after surgery, but generally the two approaches aren't given together.

By comparison, women with high-risk breast cancer, which like prostate cancer is also typically fueled by sex hormones, typically get a combination of surgery, radiation and drugs. Medicines are tailored to patients based on whether the hormones estrogen and progesterone or a gene called HER2 is fueling the tumor.

Aggressive treatment of these women has resulted in improved survival and relapse rates, says Charles Sawyers, head of the human oncology and pathogenesis program at Memorial Sloan-Kettering. Whether a similar approach would improve survival for high-risk prostate cancer isn't certain but it is "a conversation that needs to be had in a more vigorous way," he says.

There is some evidence it could work. Research from clinical trials, for instance, suggests that giving radiation soon after surgery increases the time a patient lives without the disease coming back, says Adam Dicker, head of radiation oncology at Jefferson Medical College of Jefferson University, in Philadelphia.

But there have been few studies looking at the effect of combining treatments. It can take 10 to 15 years to complete a trial testing a multipronged strategy versus a single-treatment approach.

Genetic tests have recently become available that examine tumors for molecular signatures that predict whether a tumor is high- or low-risk and can help doctors make treatment decisions.

A test marketed by San Diego company GenomeDx Biosciences Inc. yields a molecular profile that can indicate, for instance, whether a man who undergoes prostate surgery to remove the tumor would also benefit from radiation treatment, says Doug Golginow, the company's chief executive.

It "doesn't tell you if a specific chemotherapy" will work against the tumor, but "it sorts out a lot of confusion by telling you whether you have the kind of disease that's going to kill you or not kill you," he says.

Dr. Polkinghorn's research at Sloan-Kettering yielded another genetic signature that could tell men when they need less therapy. He led a recent study that showed androgen's role in prostate cancer goes beyond providing fuel for the tumor's growth; the male sex hormone also activates androgen receptors that turn on genes which repair damaged DNA. The finding is important because radiation kills tumor cells by

breaking DNA. It also explains a two-decade-old mystery over why combining radiation with anti-androgen drugs is significantly more effective against high-risk cancer than radiation alone.

Depriving the tumor of androgen "takes the sunscreen off the prostate cancer cell and makes it more sensitive to radiation," Dr. Polkinghorn says. The report was published in November in the journal Cancer Discovery.

The analysis revealed that levels of androgen-receptor activity vary widely between patients. This suggests that patients with high androgen activity may benefit from hormone therapy while those with low activity levels may gain little from it and could forgo the treatment

The researchers plan to validate the result by testing it on a database of prostate-tumor specimens gathered from a variety of clinical trials where the outcomes of the patients are known.

Dr. Polkinghorn now runs a clinic for high-risk prostate-cancer patients. He and his colleagues are developing a protocol to test how well such patients respond to more aggressive therapy.

Higher levels of melatonin may decrease risk of prostate cancer

Howard Bellin, a 77-year-old recently retired plastic surgeon who had surgery to remove his cancerous prostate in October, is being treated with the approach. The conventional strategy, Dr. Bellin says, is for doctors to wait after surgery to see if the tumor comes back and then "go after it with bigger guns" or hormone therapy. He says he is being treated now with two hormone drugs and radiation, hoping that a cure lies in "treating it with your big guns right away."

Higher levels of melatonin, a hormone involved in the sleep-wake cycle, may suggest decreased risk for developing advanced prostate cancer, according to results presented here at the AACR-Prostate Cancer Foundation Conference on Advances in Prostate Cancer Research, held Jan. 18-21.

Melatonin is a hormone that is produced exclusively at night in the dark and is an important output of the circadian rhythm, or the body's inherent 24-hour clock. Many biological processes are regulated by the circadian rhythm, including the sleep-wake cycle. Melatonin may play a role in regulating a range of other hormones that influence certain cancers, including breast and prostate cancers.

"Sleep loss and other factors can influence the amount of melatonin secretion or block it altogether, and health problems associated with low melatonin, disrupted sleep, and/or disruption of the circadian rhythm are broad, including a potential risk factor for cancer," said Sarah C. Markt, M.P.H., doctoral candidate in the Department of Epidemiology at Harvard School of Public Health in Boston. "We found that men who had higher levels of melatonin had a 75 percent reduced risk for developing advanced prostate cancer compared with men who had lower levels of melatonin.

"Our results require replication, but support the public health implication of the importance of maintaining a stable light-dark and sleep-wake cycle," added Markt. "Because melatonin levels are potentially modifiable, further studies of melatonin and prostate cancer risk and progression are warranted."

To investigate the association between urine levels of the main breakdown product of melatonin, 6-sulfatoxymelatonin, and risk of prostate cancer, Markt and colleagues conducted a case-cohort study of 928 Icelandic men from the AGES-Reykjavik cohort between 2002 and 2009. They collected first morning void urine samples at recruitment, and asked the participants to answer a questionnaire about sleep patterns.

The researchers found that one in seven men reported problems falling asleep, one in five men reported problems staying asleep, and almost one in three reported taking sleeping medications.

The median value of 6-sulfatoxymelatonin in the study participants was 17.14 nanograms per milliliter of urine. Men who reported taking medications for sleep, problems falling asleep, and problems staying asleep had significantly lower 6-sulfatoxymelatonin levels compared with men without sleep problems, according to Markt.

Of the study participants, 111 men were diagnosed with prostate cancer, including 24 with advanced disease. The researchers found that men whose 6-sulfatoxymelatonin levels were higher than the median value had a 75 percent de-

creased risk for advanced prostate cancer. A 31 percent decreased risk for prostate cancer overall was observed as well, but this finding was not statistically significant.

"Further prospective studies to investigate the interplay between sleep duration, sleep disturbance, and melatonin levels on risk for prostate cancer are needed," said Markt

A new test for grading prostate cancer

A new test may overcome one of the biggest problems in prostate cancer treatment – telling slow-growing tumours from aggressive ones – according to research presented at the National Cancer Research Institute (NCRI) Cancer Conference in Liverpool.

The Prolaris test, which has been evaluated by an international team of researchers, measures the levels of activity of genes that drive cell division, known as cell cycle genes. This gives a measure of how active the cells are, which is used to generate a Cell Cycle Progression (CCP) score.

Their research shows that the CCP score is an accurate way of distinguishing slow-growing tumours from aggressive ones – a challenge that existing tests have been unable to overcome.

After looking at the results from a number of different studies on biopsy tissue, the researchers have shown that CCP scores correlate with the severity of the cancer – so might be a useful way to predict which men need more urgent treatment.

Men with slow-growing prostate cancer detected through PSA testing** may never experience any symptoms or require any treatment in their lifetime, and can be monitored to see if anything changes. This is known as 'active surveillance'. The problem is finding a way to accurately tell apart these cancers that can safely be monitored from those that are more aggressive and need immediate treatment.

The researchers were funded by Cancer Research UK, Queen Mary University of London, Orchid Appeal, US National Institutes of Health and the Koch Foundation.

Professor Jack Cuzick, study author and Cancer Research UK scientist based at Queen Mary University of London, said: "Overtreatment of prostate cancer is a serious issue so it's essential that we have an accurate way of spotting those cancers that pose an immediate risk. For patients with slow-growing tumours, it's far safer and kinder to watch and wait – only acting if the situation starts to change.

"We've shown this test is accurate at telling apart these two different tumour types at many different stages of treatment. But we still need to work out how best to use this test to help patients. We want to try and shorten the time it takes to get the results and establish how frequently the test needs to be done in order to be most effective at spotting any changes."

Dr Harpal Kumar, chief executive of Cancer Research UK and chair of the NCRI, said: "As we've learnt from breast cancer, you often have to balance the potential harms and benefits of screening. Some countries use PSA testing, which uses a blood test to look for increased levels of a hormone associated with prostate cancer. But this doesn't tell you whether the tumour is aggressive or not.

"Being able to tell apart aggressive and slow-growing tumours would help us take a major step forward in prostate cancer treatment. Understanding more about the nature of a patient's tumour could spare thousands of men from unnecessary treatment and the resulting side effects, whilst also meaning that those who do need treatment receive it rapidly."

You are invited to the Robbie Burnstein fundraiser for prostate cancer.

Comedy icon and TV personality Jebb Fink will get his plaid on to emcee an evening of Scottish entertainment with a Jewish twist as Beth Tzedec Congregation and the Prostate Cancer Centre present the **Third Annual Robbie Burnstein Dinner** and Fundraiser on Thursday February 13, 2014 at Beth Tzedec.

Highlights include a traditional Burns Supper catered by the Fairmont Pallier, performances by The Calgary Police Service Pipe Band and the Calgary Burns Club Singers.

Proceeds from the dinner will support community education and outreach by **Beth Tzedec** and prostate cancer awareness and advocacy through the **Prostate Cancer Centre**.

The evening is about both fundraising and FUN-raising and will have wide appeal with its emphasis on giving back within the Calgary Community at large. Tickets are $180 and you are invited! **Visit www.RobbieBurnstein.com for more information or call 403 255 8688.**