

# CANADIAN PROSTATE CANCER SUPPORT GROUP

Newmarket, Ontario

Volume 13, Issue 4, December 15th, 2008

A support group that provides understanding,  
hope and information to prostate cancer patients and their families

**Make sure you come to our Christmas Meeting on December 18th, 2007**

At the  
Newmarket  
Seniors Meeting  
Place, 474 Davis  
Drive, Newmarket

**Time:**

7:00 pm  
to 9:00 pm

**Subject:**

Bill Tuplin  
one of our long  
serving executive  
members brings back an evening of  
song featuring the Upper Canada Cordsmen  
and yourselves and finishing with our annual Christmas party,



Canadian Prostate Cancer Support Group,  
Newmarket, Ontario. 905-830-0447  
a member of the



Canadian Prostate Cancer Network

Assisted by the Canadian Cancer Society  
Holland River Unit  
Cancer Information Service  
1 - 888 - 939 - 3333

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*The Newmarket Prostate Cancer Support Group does not recommend products, treatment modalities, medications, or physicians. All information is, however, freely shared.*

## November Speaker notes **Dr. Hans T. Chung, Sunnybrook Health Sciences Centre**

### **Subject: Brachytherapy and IMRT**

*Dr. Hans T. Chung of the Sunnybrook Odette Cancer Centre, our speaker at the last meeting, used a power point presentation to illustrate his talk on Brachytherapy and Image Modified Radiation Therapy. He gave a basic and very thorough explanation of the Staging, PSA and Gleason scores the medical profession now uses to help in recommending the course of treatment we should consider. He also brought us up to date on wide ranging improvements in both diagnosing and treatment to help us along the path. Here is what he had to say.*



Tonight I'm going to be talking about the role of radiotherapy for prostate cancer. I hope to be able to demystify it for you. Let's start off with some basics regarding prostate cancer. One of the key things we use to identify prostate cancer is what we call staging. You've probably heard some of the buzz words we use, like T1, T2, T3, T4. What do these

actually mean? T1 means that there is a cancer inside the prostate gland but we cannot feel it with a finger. The next stage is T2. That represents a slightly larger cancer one that we can now feel with a (DRE) finger exam. Within T2 there are actually sub-stages like T2a, T2b and T2c. These represent bigger cancers as appreciated by the finger. For instance, T2a and T2b means that you can feel a nodule on one half of the prostate gland. The difference between T2a and T2b is that in T2a the nodule represents less than one half of half of the prostate gland. T2c means that you can feel a nodule on both sides of the gland. T3 means that there is extra capsular extension, which means that the cancer tumour has actually gone beyond the capsule and into the nearby areas. T4, which is the highest stage, means that the tumour has actually invaded nearby critical structures, the most common being rectum, the second most common is the bladder.

What are the risk factors of prostate cancer? There is age, we know for instance on autopsy studies done that as men age they are at higher risk of prostate cancer. When they actually manifest with urinary symptoms or having T3 or T4, that's a different story. As men age they will actually develop prostate cancer. The key thing is whether it becomes a problem. It may not be so. The second thing is family history, the third is a high fat diet and African ancestry is also linked with high risk prostate cancer. Currently the extent of prognosis of prostate cancer will rely on three key things: the T stage, the PSA - the blood test which I'm sure all of you are aware of, the third thing is the pathologic grade, which is called the Gleason score. The Gleason score represents what the pathologist sees on the biopsy. It's somewhat subjective but they assign a grade out of ten. You will hear numbers like 3+3,

3+4. You simply just add them up and that becomes your Gleason score. The most common is 6 - 10. Currently, within that range the most common is 6 or 7, you're less likely these days to see a Gleason 9 or 10.

Let's look at some Canadian Prostate Cancer statistics. In 2007, across Canada, over 22,000 men were diagnosed with prostate cancer. Fortunately though, a very small minority will die from it. On average, each week, 439 men are diagnosed across Canada and one in eight men will be diagnosed mostly after the age of 60. One in 27 will die from it and so, generally, right now the PSA test is recommended from the age of 50, although it can be done earlier if there are compelling risk factors, like family history and African ancestry. Prostate cancer is the number one diagnosed cancer across Canada among men. However, when we look at deaths from cancer in men, prostate cancer is third, lung cancer being number one. That means that, although we diagnose less of lung cancer, more often than not it proves to be lethal. Using these three key diagnostic tests, risk groups were identified. You may have heard things like you have low risk disease, intermediate risk disease and high risk disease. There are a number of slightly different definitions from different institutions but the most common one is:

Low risk disease means that you have to have all of the following: a PSA of less than 10, Gleason score of 2-6 and a T stage of T1 to T2a and you have to have all three of them.

An intermediate risk means that you have a PSA of 10-20 and or a Gleason score of 7 and/or a stage T2b.

High risk is for the remaining patients, i.e. a PSA of higher than 20, a Gleason score of 8-10 and stage T2c and above.

It's interesting to see the depth of some of the studies which illustrate that, with more and more PSA screening, the occurrence of high risk disease is diminishing significantly. Back in the early 1990s, high risk patients represented more than a third of all diagnoses. Nowadays it's down to 16%. In the other end of the spectrum, low risk was 30% of patients in the 1990s, now it's gone up to 47%, so this is all thanks to PSA screening. Let's break it down by the individual risk factors. T1 disease, in the early 1990s only 17% of men had T1. Everyone else, there was a palpable module. When we look at early 2000, half the patients had T1 disease, so that's a dramatic change in presentation. Then, when we look at the Gleason score, we can see that Gleason 2-6, which is low

grade, has actually not changed very much during this period. We've become much more experienced in dealing with interpreting the pathology slides. The problem with the Gleason score is that it is so subjective. For instance at Sunnybrook depending on where the biopsies were done, we often request the slides and read them as a second opinion in house. Our own pathologist has a lot of experience reading them and we feel more comfortable by doing so and we do see a fair number of cases where the Gleason score actually does change. With PSA screening we are diagnosing patients with a lower and lower PSA. In the early 1990s, less than half the patients had a PSA of less than 10, nowadays, 80% of patients have a PSA of less than 10.

Let's look at the treatment trends only among the low risk patients. In the early 1990s, almost two thirds of patients would have surgery, whereas only 3% of patients had brachytherapy. That's because brachytherapy underwent a major evolution at that time, so it wasn't widely available. Going into the 2000s, surgery has become slightly less popular, from 63% down to 51% but the big gainer in market share is prostate brachytherapy. From 3% it surged all the way up to 20% so that means one in five men with low risk disease opted for prostate brachytherapy. As for external beam radiation, that number has diminished somewhat, from 16% to about 7%.

Let's look at treatment options that are available for all prostate cancers. dividing into indolent disease, active disease and progressive disease. Indolent disease means that it's slow growing, PSA is not budging much. The treatment recommended for them would be active surveillance or watchful waiting. What that means is that we follow the PSA every three months to six months and try to establish a trend. If the PSA starts going up significantly then we would intervene with treatment. The advantage of doing so is that you delay treatment because treatment inevitably has some side effects. Moving on to active disease, the treatment options would be surgery, which with today's improvements can be minimally invasive, reducing blood loss, patients bounce back much quicker; the other options would be radiotherapy or brachytherapy. Radiotherapy includes external beam radiation. Brachytherapy is where radioactive seeds, very small, about 3mm long and 1mm wide, are inserted directly into the prostate gland. They wear out after six months to a year. With more aggressive treatment, there are things like adding on hormonal therapy. For more advanced disease, chemotherapy becomes an option.

That begs the question, is there any difference between tumour control with the different modalities for low risk disease? In a study from Memorial Sloane Kettering and a well-known Cleveland clinic, they looked at their patients who were treated with external beam radiation, brachytherapy and surgery. What made this study impressive is that they had over 3,000 patients consecutively treated for T1 to T2 low grade prostate cancers. The PSA indicated that the results were

almost identical with the exception of low grade external beam radiotherapy of less than 72 grade, which was inferior. It's the largest published study comparing the most frequently used treatments for completely localized (low risk) prostate cancer. The important thing is that it included patients from the PSA era, which made it easier to compare the results.

I'm going to focus on radiation because that's what I do. Radiation is energy in the form of waves or particles. For instance, this light is radiation, the sunlight is radiation. This light is too weak to cause any problems. Other non ionizing radiation includes radio waves, microwaves. Radiation that can cause a problem is called ionizing radiation. For instance, sunlight, there's the UV radiation of the sun, we know it can cause skin cancer if you get prolonged exposure, X-rays, CT scans or even radiotherapy, these can cause a problem and also gamma rays which we use to treat cancer, such as brachytherapy.

The problem that radiation causes is that it can damage the genetic material in our cells, making it impossible for them to divide and grow. For normal tissue, this is obviously bad. The best example of that would be the atomic bomb at Hiroshima or the Chernoble reactor accident, those are bad. For cancer cells, though, radiation is actually good, because radiation preferentially kills cancer cells by damaging their DNA.

We use different types of radiation: there's the external beam, which doesn't penetrate the body deeply and is good for surface lesions like skin lesions, basal type carcinoma. Stronger types of this radiation don't deposit radiation dose until deeper in the body. These are good for deep tumours such as prostate which is in the middle of your body, breast tumours, cervical cancer and lung cancer. Then there's the internal radiation, the radioactive seeds which are inserted directly into the body to give high dosage in a very limited area. Internal radiation is put directly into the cancer. External radiation, as the name implies, shoots in radiation from multiple angles. They converge inside the body and become high dose volumes. External beam radiation for prostate cancer is generally eight weeks of treatment given once a day from Monday to Friday. Each session takes about 30 minutes but most of that time is actually preparation time. Depending on the risk of the cancer, we will change the radiation volume. For instance, low risk disease, I would treat only the prostate gland itself. As we move on to higher risk disease, though, that, as the name implies, has a higher risk the cancer cells may have spread and when they do, they usually spread sequentially, for instance into the surrounding lymph nodes or into the bone. So for high risk disease, I treat the prostate and the pelvic nodes. Side effects are generally mild to moderate. They are mostly due to rectal and bladder toxicities because we are aiming down there.

*Dr Chung finished his talk showing the latest studies on the screen and answering questions from the audience.*

## Natural Therapy for Prostate Cancer

As an alternative to active surveillance or invasive treatments, which does nothing to change the course of disease, a growing number of clinicians and researchers are looking at non-invasive ways to help men with apparently localized prostate cancer. Perhaps most convincing among this group are Dean Ornish, MD and colleagues, previously made famous for showing that aggressive lifestyle changes can reverse atherosclerosis, and now showing that PSA can be lowered in men with apparent localized prostate cancer using a vegan diet (fish allowed), regular exercise, and stress reduction. These results have so far proven durable after two-years' treatment.

Many other single agents have been shown to reduce

PSA, slow PSA doubling times, or have similar effects on secondary markers in men with localized cancer in short term trials, such as the Wonderful variety of pomegranate juice 8 oz daily or genistein, an isoflavone found in various legumes, 60 mg per day. The potential of using multiple such agents in concert, let alone combining them with lifestyle changes, has not yet been studied but the potential is great. This is particularly true because most of these natural approaches have very low adverse effect rates, and in fact tend to help other risk factors and disease conditions such as atherosclerosis, diabetes, and risk for other cancers at the same time they are helping slow down prostate cancer.

### Prognosis and Risk assessment

Prostate cancer rates are higher and prognosis poorer in developed countries than the rest of the world. Many of the risk factors for prostate cancer are more prevalent in the developed world, including longer life expectancy and diets high in red meat and dairy products (although it must be noted, that people who consume larger amounts of meat and dairy, also tend to consume fewer portions of fruits and vegetables. It's not currently known whether or not both of this factors, or just one of them, contributes to the occurrence of prostate cancer). Also, where there is more access to screening programs, there is a higher detection rate. Prostate cancer is the ninth most common cancer in the world, but is the number one non-skin cancer in United States men. Prostate cancer affected eighteen percent of American men and caused death in three percent in 2005. In Japan, death from prostate cancer was one-fifth to one-half the rates in the United States and Europe in the 1990s. In India in the 1990s, half of the people with prostate cancer confined to the prostate died within ten years. African-American men have 50–60 times more prostate cancer and prostate cancer deaths than men in Shanghai, China. In Nigeria, two percent of men develop prostate cancer and 64% of them are dead after two years.

In patients who undergo treatment, the most important clinical prognostic indicators of disease outcome are stage, pre-therapy PSA level and Gleason score. In general, the higher the grade and the stage, the poorer the prognosis. Nomograms can be used to calculate the estimated risk of the individual patient. The predictions are based on our experience with large groups of patients suffering from cancers at various stages.

### Speakers for our Future 2009 meetings.

#### Mark these dates on your calendar

<b>December</b>	<b>18<sup>th</sup></b>	<b>Christmas Party</b>
<b>January</b>	<b>15<sup>th</sup></b>	<b>Dr. Loblaw, Timing of Hormones after treatment failure</b>
<b>February</b>	<b>19<sup>th</sup></b>	<b>Pathologist from Southlake</b>
<b>March</b>	<b>19<sup>th</sup></b>	<b>To be Announced</b>
<b>April</b>	<b>16<sup>th</sup></b>	<b>Speaker from Sunnybrook on Nutrition</b>
<b>May</b>	<b>21<sup>st</sup></b>	<b>Dr. Robert Bristow, PMH Spy on DNA repair of cancer cells</b>
<b>June</b>	<b>18<sup>th</sup></b>	<b>Duhane Wong-Reiger</b>