

2012 PROSTATE CANCER CONFERENCE

*Making a Positive Impact
on Quality of Life*

September 7-9, 2012

Marriott Los Angeles Airport Hotel,
California



Moderated By:
Mark Moyad, MD

Produced By:



Helping Men Know Their Options



Conference Director:
Mark Scholz, MD

FRIDAY, SEPTEMBER 7

Afternoon

Exhibit Hall & Conference Registration Opens	
PC 101 & 201	Nathan Roundy, PCRI Educational Facilitator
Magic Castle Excursion (additional fee applies)	

SATURDAY, SEPTEMBER 8

AM

What the Heck Do You Do With a Tiny Cancer?	John C. Blasko, MD Radiation Oncologist, Seattle, WA
Treating High-Risk Prostate Cancer	Richard Lam, MD Research Director, Prostate Oncology Specialists
How to Manage Prostate Cancer if it Comes Back After Surgery or Radiation	Charles "Snuffy" Myers, MD Founder & Medical Director, American Institute for Diseases of the Prostate

PM

Treating Prostate Cancer that has Metastasized	Robert Dreicer, MD Chairman, Department of Solid Tumor Oncology, Cleveland Clinic
The Coming Wave of New Treatment	Eugene Kwon, MD Professor of Urology & Immunology, The Mayo Clinic
Preventing Treatment-Related Side Effects	John Mulhall, MD Director, Male Sexual & Reproductive Medicine Program, Memorial Sloan Kettering Cancer Center
Issues of Intimacy	Lori Buckley, PsyD Therapist, Dr. Lori Buckley & Associates
Saturday Night Gala (additional fee applies)	

SUNDAY, SEPTEMBER 8

AM

Saturday Review, Q&A	Mark Moyad, MD Mark Scholz, MD Medical Director, Prostate Oncology Specialists
ASK THE EXPERTS	
Immunology	Mark Scholz, MD
Radiation	Michael Steinberg, MD Chair of Radiation Oncology, David Geffen School of Medicine at UCLA
Hormone Blockade	Stephen Strum, MD Medical Oncologist, Ashland, OR
Chemotherapy	Richard Lam, MD Research Director, Prostate Oncology Specialists
Active Surveillance & Focal Therapy	Duke Bahn, MD Medical Director, Prostate Institute of America
Hormone Therapy	Charles "Snuffy" Myers, MD Founder & Medical Director, American Institute for Diseases of the Prostate
Surgery	Eugene Kwon, MD Professor of Urology & Immunology, The Mayo Clinic
Imaging	Fabio Almeida, MD Medical Director, Southwest PET/CT Institute, Arizona Molecular Imaging Center, Indian Wells PET/CT Center

PM

Roundtable Discussion	Conference Faculty
Closing Remarks	Mark Scholz, MD
Getty Villa Excursion (additional fee applies)	

*agenda and faculty subject to change.



PCRI

Insights

Patient & Physician in Co-Partnership

MAY 2012 VOL 15: NO 2

New Developments in Prostate Cancer Treatment



2012 CONFERENCE: REGISTER NOW!

The **2012 Prostate Cancer Conference** will feature the world's most prominent experts in prostate cancer research and treatment. Sessions will be held on topics such as imaging, active surveillance, radiation, hormone therapy and much more - don't miss this rare opportunity to learn from the best!

Explore the attractions of Los Angeles during your stay! Excursions to the historic **Magic Castle** and **Getty Villa** are available to conference attendees - see page 4 for more information, and complete the form on page 31 to register.

We'll see you in September!

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From the PCRI Staff

Cathy Williams,
Chief Operating Officer



Why Attend the Conference?

Over the past five years, patients, advocates and caregivers have traveled from 48 states and 21 countries to attend the annual **PCRI Prostate Cancer Conference**. Some attend year after year, while others are first-time attendees.

So why do these men attend?

Different people come for different reasons – whatever yours may be, there is guaranteed to be something for everyone at this year's conference. Here are just a few reasons why you should make the trip this September!

The top doctors in the world will be covering different stages of prostate cancer and the latest treatment options. Doctors from the Mayo Clinic, Cleveland Clinic, American Institute for Diseases of the Prostate, UCLA and other world-renowned institutions will deliver messages of encouragement in the prostate cancer field.

To be in the presence of these doctors and receive their knowledge and attention is invaluable. Normally, distance and expense would make it near impossible to hear from these physicians, not to mention the amount of time required to visit each doctor. You would be hard-pressed to hear each doctor's presentation and have the opportunity to "Ask the Expert" after each session. The PCRI conference offers a rare opportunity to not only hear these experts speak, but also to interact with them in an intimate setting.

Conference moderator Dr. Mark Moyad weaves humor in and out of his hard-nosed questions to the doctors - questions you may be afraid to ask, or have not yet thought to ask. But nobody gets off the hook with Dr. Moyad! Don't let his sense of humor fool you. His wisdom and passion make him one of the most formidable doctors in the field.

There is power in numbers! This is the only conference in the world targeted towards prostate cancer patients, which means hundreds of men like you will be in attendance. Whether they are newly diagnosed or have been living with the disease for years, the PCRI conference attracts men with a variety of stories to tell and experiences to share. The conference gives you not only an education on surviving with prostate cancer, but also the opportunity to meet others just like you.

Time away in beautiful Southern California. Discover the sights and sounds of Los Angeles! The conference is right down the street from the LAX airport, and within minutes of several exciting places to visit. The Venice boardwalk, Abbot Kinney Boulevard, Marina del Rey, state parks, Westchester Golf Course, Third Street Promenade, and beautiful Manhattan Beach Pier are all just a short drive away.

Our excursions this year will be the Magic Castle and the Getty Villa.

The Magic Castle is the showplace for some of the greatest magicians from around the globe. Built in 1908, this mansion has watched Hollywood grow and change for over 100 years, while never losing its original charm. Admittance to the Magic Castle is very exclusive, and by invitation only. A generous prostate cancer survivor has kindly extended an invitation to conference attendees – but space is limited, so register early!

The second excursion is to the **Getty Villa**, just off the beautiful Pacific Coast Highway in Malibu. The Getty Villa contains an impressive collection of Western art from the Middle Ages to the present day, against a backdrop of dramatic architecture, tranquil gardens and breathtaking views. Reservations are now being accepted for this trip, and transportation is provided for both conference excursions.

Finally, the most powerful reason to attend the conference is **hope**.

Last year was my first time attending a PCRI conference. I vividly remember walking out to the registration line and feeling overcome with emotion. I knew every person in that line was there for hope - for that one piece of information that would improve their quality of life. This is the heart of what PCRI does every day, and what we bring to the conference. **We empower the patient.**

So come join us at this fall's conference for a celebration of wisdom, friendship and hope - a **celebration of life!**

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Royal: The Fifth Shade of Blue

RICHARD LAM, M.D.

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Prostate cancer comes in many forms and presents at different stages.

To simplify, we divide it into categories, or “shades” of Blue. The first three shades - Sky, Teal and Azure - represent the commonly described Low, Intermediate and High-Risk categories of men who have never had surgery or radiation (local therapy). The fourth and fifth Shades, Indigo and Royal, represent men who have Relapsed and Advanced disease, respectively (see table).

Men in the Royal category have either confirmed spread of cancer to a distant area of the body other than the pelvic lymph nodes, a PSA above 100 or a rising PSA despite negligible testosterone levels in the blood.

	Local Therapy	Gleason Score	% Cores with cancer	PSA Level	Rectal Exam	Endorectal MRI & CT	Bone Scan
Sky(1)	No	<7	<34%(2)	<10	No Nodule	No ECE	No Need
Teal(3)	No	7	34-50%	10-20	Small Nodule	No ECE	Clear
Azure	No	>7	>50%	>20	Large Nodule	ECE/SV/PN	Clear
Indigo	Yes	Any	Any	<100	Any	Pelvic Node	Clear
Royal	Yes/No	Any	Any	>100	Any	Other Node	Positive

1. To qualify into Sky, all the results must meet the criteria of the top row.
 2. A single core having more than 50% cancer bumps the category to Teal.
 3. Two or more factors in the Teal row bumps the category to Azure.
- ECE = Extra-capsular Extension, SV = Seminal Vesicle, PN = Pelvic node*

Treatment for men in the Royal category has become much more complex in the last couple of years, and for a good reason: So many new treatment options are available to patients in this group.

In the old days, men in the Royal blue category with less advanced or slower-growing prostate cancer were treated with ketoconazole or estrogen. Men with more aggressive disease received Taxotere, Mitoxantrone or spot radiation.

Now Provenge®, Zytiga® (abiraterone) and Jevtana (cabazitaxel) are on the market. MDV-3100 (enzalutamide) and Alpharadin® will likely be FDA-approved soon. Additionally, an abundance of exciting new investigational agents such as Prostavac®, Ipilimumab (Yervoy®), Custirsen (OGX-011), TAK-700, XL-184 and Tasquinimod, medicines that make a significant difference, are available via clinical trials. There are many unanswered questions about selecting the proper sequence.

(continued on page 6)

Let's start with the four basic principles of treatment for men in Royal:

1. **Start early and begin with the best therapy.** The “best therapy” is the one that is most likely to be effective without incurring excessive side effects. At Prostate Oncology Specialists, we consider “holding the best treatment in reserve” to be a losing strategy, because it allows the cancer to become more entrenched and will result in lower response rates.

Sequencing treatment has become an even more weighty issue, because access to new investigational agents is determined by each patient's exposure to previous treatment. Selecting one treatment may close the door on another.

2. **Monitor the situation closely.** Prostate cancer is a dynamically changing situation, and special attention needs to be given to determine when a treatment is no longer working. Precious time can be lost by staying on an ineffective treatment when many good alternatives have yet to be tried.

In general, after starting most new treatments, it usually takes 60-90 days to determine whether it is working. A reduction in pain (if present) is usually the first sign that a treatment is effective. This is usually followed by a decline in blood markers such as PSA, PAP, LDH, ALP and CTC (circulating tumor cells). Bone scans and CT scans show changes more slowly. (Improvement in PET scans occur faster, usually within 30-60 days).

3. **Treatment selection is influenced by disease severity.** Disease severity is judged by its extent (few or many spots on a bone scan) and rate of progression (cancer symptoms of pain or PSA rapidly rising). With extensive or rapidly progressing disease, it may be necessary to forgo hormonal and immune treatments and jump directly to chemotherapy.

4. **Physical Strength and Bones.** Physical strength is sapped by advancing age, low testosterone levels and chemotherapy. This is why resistance training with weights under the supervision of a trainer is essential.

Prostate cancer and low testosterone levels can also weaken the bones. Unless there are medical contraindications, everyone in the Royal category should be taking Xgeva or Zometa. Spot radiation to the bones, long considered standard in the management of bone metastases, should be used sparingly. Excessive bone radiation cripples the immune system and limits future treatment options.

Most men in Royal have already been taking hormone therapy, such as Lupron®, Trelstar® or Zoladex®. The majority of this article is about what to do when the disease progresses after already being on Lupron for some time. However, some men in Royal have high PSA levels and positive bone scans at the time of diagnosis.

Obviously, men in the Royal shade who have never had hormone therapy should probably start. We have active Royal-category patients in our practice who have taken Lupron alone, with PSA levels maintained at less than 0.1 for more than ten years. Unfortunately, such favorable long-term results only occur in a minority of patients. Therefore, we routinely use upfront Casodex and Avodart (or Proscar). If there are only a couple of bone metastases, we consider adding spot radiation.

If the PSA fails to drop below 0.1 with Lupron, Casodex and Avodart (known as a high PSA nadir), this usually indicates that the PSA will soon rise. The next step is to stop the Casodex. Rarely, the PSA will go down for a short period of time after stopping Casodex. *(continued on page 7)*

When PSA starts to rise, if the pace of disease progression is slow, then our next step is to start Provenge, followed by Zytiga (Provenge is only covered by insurance when the PSA is rising. If Zytiga is started first, the PSA will drop and Provenge will have to be postponed until the Zytiga stops working).

If insurance coverage is confirmed, Zytiga can usually be started right after Provenge. Zytiga is normally given with prednisone. However, since prednisone can diminish the immune effects of Provenge, we recommend substituting another medication called Inspira for the prednisone.

Clinical Trial Alternative #1

Prostavac is a new immune treatment only available in a clinical trial. Men who have had Provenge are excluded from this trial. Rather than starting Provenge immediately, some men may prefer to participate in the Prostavac trial, and plan to use Provenge afterward. The results of a preliminary study demonstrated a substantial prolongation of survival in men treated with Prostavac.

Zytiga is very effective and quite well-tolerated. Three months after treatment with Provenge, we recommend stopping Inspira and starting prednisone. Prednisone enhances Zytiga's effectiveness.

The next step in our clinic, if the cancer starts to progress while taking Zytiga, is Taxotere. Taxotere is most effective when given every three weeks in a larger dose. However, it is much better tolerated when given weekly in smaller doses. Due to its rapid onset of action, Taxotere is considered the first step for men whose cancer is progressing rapidly or causing pain.

Taxotere's effectiveness can be further enhanced by combining it with other chemotherapies, such as Carboplatin, Xeloda or Emcyt. The most active protocol that has been reported to date is a combination of Taxotere, Avastin and Revlimid. Practically everyone will experience a dramatic decline in PSA with these three drugs. However, as expected, side effects, including osteonecrosis of the jaw, occur much more frequently.

Clinical Trial Alternative #2

Tasquinimod is a potent new anti-angiogenesis (strangulates the cancer by cutting off its blood supply) medication. The attractive aspect of this drug is that it can be taken orally.

Clinical Trial Alternative #3

A new medicine called **Custirsen** that substantially enhances Taxotere's effectiveness is being studied in a clinical trial. Half the men get Taxotere and the other half receive the combination of Custirsen plus Taxotere. Side effects from adding Custirsen to the Taxotere are mild. A preliminary report of Taxotere and Custirsen showed a 60% increase in survival compared to Taxotere alone.

A number of additional types of chemotherapy, including Mitoxantrone, Adriamycin, Velban and Flurouracil, can be considered if resistance to Taxotere develops. However, a large randomized trial in 2009 clearly showed that Cabazitaxel (Jevatana) is effective in men who have become resistant to Taxotere. Therefore, Cabazitaxel should be the first consideration in men who are Taxotere-resistant.

(continued on page 8)

Clinical Trial Alternative #4

XL-184 is a new medication being studied in two different Phase III trials in men who are resistant to Zytiga and Taxotere. The first trial will evaluate the effectiveness of XL-184 compared to Mitoxantrone for controlling pain. The second trial will evaluate the effect of XL-184 on survival. Preliminary studies of XL-184 have shown rapid resolution of pain and rapid disappearance of cancer abnormalities seen in bone scans.

Clinical Trial Alternative #5

MDV-3100 is a new, very active agent that will likely be available by the summer of 2012 in an expanded access trial. Medivation, the company that owns MDV-3100, anticipates FDA approval by the end of the year. In the meantime, they plan to distribute MDV-3100 free of charge to men with progressive prostate cancer who have progressed on Taxotere.

Clinical Trial Alternative #6

Alpharadin is a new bone-targeted agent that has been shown to alleviate bone pain and prevent skeletal fractures. More importantly, its bone-protecting effects are so profound that it has been shown to prolong life. This agent is expected to be FDA-approved in 2012, and is also available through an expanded access trial (see page 26).

Clinical Trial Alternative #7

TAK-700 (Ortoronel) is a new hormone agent similar to abiraterone (Zytiga). Studies are currently being conducted in two types of patients with metastatic disease: Those who have not received Taxotere and those who progressed despite Taxotere.

The therapeutic landscape for advanced prostate cancer is rapidly charging ahead. We now have four FDA-approved interventions that have been shown to prolong the lives of patients with advanced metastatic disease.

The selection of the best treatment plan is only possible after carefully reviewing all available options and creating a tailored plan specifically for each individual. This means assessing the patient's cancer volume and growth velocity, as well as his ability to tolerate treatment.

As more options become FDA-approved in the near future, clinicians will be able to manage a disease, once thought to be rapidly fatal, as a chronic condition. Survival will be measured in years, not months. Furthermore, clinicians will have the opportunity to see even better results by using these medications together in exciting new combinations. ♦



Visit the Prostate Cancer
Blue Community at
www.pcribc.org to learn more about
SHADES, network with
other men in your category and talk
to PCRI Helpline mentors!

Radium-223 (Alpharadin)

A Novel Targeted Alpha-Emitter for Bone-Metastatic Castrate-Resistant Prostate Cancer



OLIVER SARTOR, M.D.

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If a prostate cancer patient develops metastases in the course of his disease, bone is the most common site. Approximately 90% of these metastatic patients will have at least one bone lesion.

This has led to the concept that a bone-targeted therapy may prolong survival. Although this concept is attractive and logical, actual proof has only recently been demonstrated.

Bone-targeted therapies such as zoledronic acid (Zometa), denosumab (XGEVA), samarium-153 EDTMP (Quadramet) and strontium-89 (Metastron) have been tested in large phase III randomized trials, but none of these agents have been proven to prolong overall survival, unlike agents such as docetaxel, sipuleucel-T, cabazitaxel and abiraterone (1-4).

Radium-223 (or Alpharadin) is a new targeted alpha-emitting agent which has shown a prolongation of survival in castrate-resistant prostate cancer patients with bone-metastatic disease (5).

To digress for a moment, patients that have failed initial hormonal manipulations such as Lupron, Eligard, Zoladex, or Trelstar, or surgical removal of the testicles, are referred to as having “castrate-resistant” prostate cancer, or CRPC. This state was once referred to as being “hormone-refractory” but now we know that secondary hormonal manipulations can have benefits, so castrate-resistant is the current term in vogue.

This brief article is designed to help patients understand radium-223, which is currently available for expanded access trials in select locations (please see page 26). Submission to the FDA for radium-223 regulatory approval is ongoing at this time. The concept of a targeted alpha-emitting therapy will likely evolve in the years to come. In my opinion, this is a first step - not a last.

BASIC CONCEPTS IN RADIATION

Radiation is administered in three primary forms: external beam radiation therapy (EBRT), brachytherapy (radioactive seeds) and injectable radiopharmaceuticals.

External beam radiation is commonly used to treat localized or regionally advanced prostate cancer with a curative intent.

It is also commonly used to treat bone metastases, primarily to provide pain relief.

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Administration of external beam involves a machine which delivers and focuses a radiation beam to the desired area. Both photons and protons are used in the external beam setting, though protons are rarely used for treatment of metastatic lesions.

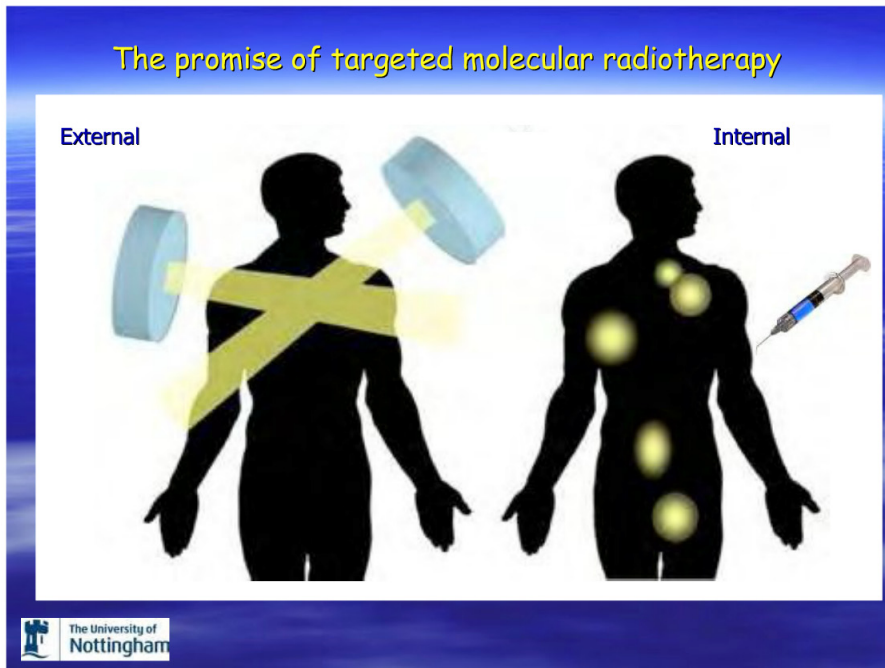


Image courtesy DocStoc.com

External beam radiation has both advantages and limitations. The beam will go where it is aimed, but cancers outside of the beam are not affected. Because physicians are imperfect in determining the location of cancers, sometimes radiation fails to control the disease. Though radiation will reliably kill cancer in the “fields” of administration, normal tissues in the radiation path are also damaged, and side effects are related to normal tissue damage.

Internal (injectable) forms of radiation have been used to treat patients with bone metastases for over 50 years. Two forms of injectable radiation, strontium-89 and samarium-153-EDT-

MP, have been FDA-approved for use on bone-metastatic castrate-resistant prostate cancer patients. These compounds can relieve pain, but do not prolong survival. Both of these compounds are radioactive and emit radiation in the form of an electron (also called a beta-particle). The strontium-89 has a long half-life of slightly over 50 days, while samarium-153 has a half-life of only 1.9 days. These compounds bind to the “stroma” surrounding bone metastatic lesions, and then irradiate both the tissue adjacent to the tumor and the tumor itself. Some bone marrow is usually radiated as well. This can lead to lower blood counts in some men.

Brachytherapy, or radioactive seed therapy, is another form of localized radiation. In this case, seeds are carefully placed in the prostate and a high dose is delivered to the tissues adjacent to the seeds. Radioactivity will kill tumors adjacent to the seeds but not affect tumors that are several centimeters away.

CONVENTIONAL INJECTABLE FORMS OF RADIATION THERAPY

How do injectables localize to areas of bone metastases? Prostate cancer bone metastases have a peculiar trait. They are typically “osteoblastic” or “bone-forming” (called blastic or sclerotic). This means that on X-rays or CT scans, the metastatic lesions show up as an area of hyper-dense bone. When viewed on a microscopic level, the region surrounding the cancer cells (the stroma) contains increased new bone formation and increased amounts of calcium and phosphate.

Strontium-89 is a part of the periodic table termed the alkali earth metals. This group of compounds behaves similarly to calcium in biologic systems. Samarium-153 does not bind to the stroma of osteoblastic metastases, but when bound to a compound called EDTMP, it binds avidly to highly calcified regions of bone. Both strontium-89 and samarium-153 EDTMP are beta particle emitters, and both are FDA-approved on the basis of randomized phase III studies that demonstrated an improvement in pain. Both of these agents represent important steps forward in the evolution of radiation therapy.

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WHAT ARE BETA AND ALPHA PARTICLES?

Beta particles are electrons that are emitted from an unstable nucleus. Alpha particles are also emitted from unstable nuclei, but are about 7,000 times larger (see Table 1). They are comprised of two protons and two neutrons, and are equivalent to a helium nucleus. The beta particles travel at nearly the speed of light, and alpha particles travel at about 10 percent of the speed of light. Both particles interact with surrounding molecules and can cause cell death via DNA breakage. DNA contains the genetic code, and replication of DNA is essential for cellular proliferation.

Cells with damaged DNA often die in the process of cell division, as the DNA replication cannot successfully occur. Beta particles are more likely to cause single-strand DNA breaks (the DNA is a double helix with two strands). Alpha particles are more likely to cause highly lethal double strand breaks (6).

Calculations indicate that only 1-10 alpha particle “hits” per cell can result in cell death compared to beta particles, which require literally thousands of hits. Because of the large size of alpha particles, the distance traveled is very small. Small particles are less likely to interact with other molecules. Most alpha particles travel less than 100 microns (one micron is equal to 1000th of a centimeter). Beta particles travel various distances, but typical beta particles from strontium-89 or samarium-153 travel about 0.2-2.0 centimeters. Various beta emitters have been used in medicine, but alpha particles are new to medicine, and Radium-223 is the first alpha-emitter to be tested in a large clinical trial.

Table 1: Comparison of Alpha and Beta Particles

Characteristic	Alpha	Beta
Particle equivalent	2 protons and 2 neutrons	1 electron
Relative particle mass	7300	1
Energy (MeV) per emission	3–8	0.01–2.5
Range in tissue (µm)	40–100	50–5000
Lethal hits per cells	1–10	100–1000

RADIUM-223: BASIC CONCEPTS

Radium-223 is an alkali earth metal similar to strontium-89. As such, it is calcium-mimetic, and binds to the stroma in regions of osteoblastic metastases. It has a physical half-life of a little over 11 days.

Radium-223 is an alpha-emitter. This ability of alpha particles to travel only a short distance from the site of origin, combined with their highly destructive cellular effects, results in a maximum amount of cellular killing in regions adjacent to their deposition and a minimal amount of damage to other tissues. **Thus, the side effects of alpha particle radiation are minimal because the particle has minimal effects on normal tissues. Only the tumor cells in close proximity to the osteoblastic metastatic lesion are radiated.** Thus, radium-223 is a highly targeted alpha-emitter that localizes specifically to the osteoblastic lesions typical of metastatic prostate cancer.

CONTINUED ON PAGE 12

**Bottom Line:
Radium-223 Is Short Range But Deadly**

2-10 cell diameter range of alpha-particle

Bone marrow

Tumor

Radium-223

Bone

- Highly localized cell killing with minimal damage to surrounding hematopoietic tissue

Perez et al. Principles and Practice of Radiation Oncology, 5th ed. Lippincott Williams & Wilkins; 2007

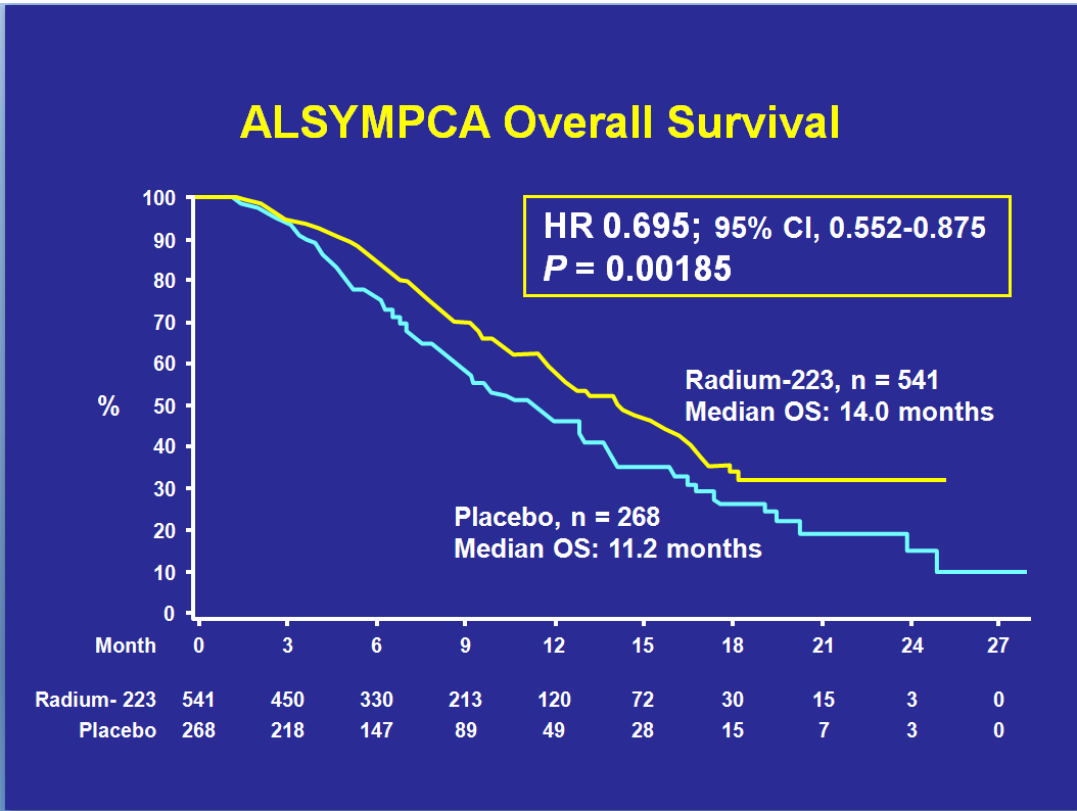
CLINICAL DATA WITH
RAD-223

Though alpha-particle radiation targeted to osteoblastic metastatic lesions has theoretical advantages, data from clinical studies always constitute the proof necessary to ensure that a concept is both safe and effective.

The first human studies with radium-223 in patients with prostate cancer established the effective targeting of osteoblastic bone metastases. Once targeting was established, dose ranging studies were performed to define safety. During these studies, both safety and pain relief were noted. A small randomized trial of 64

patients with bone-metastatic “castrate-resistant” prostate cancer was performed. All men received radiation to bone and then were randomized to four doses of radium-223 or placebo. Interestingly, in this small trial, the radium-223 treated patients lived longer (7) (see Figure 1).

Figure 1: Overall survival in the phase III study of radium-223 and placebo (7)



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Based on the survival advantage in the small randomized trial, a larger randomized trial (the ALSYMPCA trial) with over 900 patients was designed to assess effects on survival. This trial enrolled symptomatic patients with bone-metastatic CRPC who lacked liver, brain or lung involvement. No lymph nodes larger than three centimeters were allowed. This was done to minimize the enrollment of patients with disease outside of the bone, a population unlikely to benefit from radium-223. Patients had to have been treated with docetaxel or be considered by their physician to be “unfit” for docetaxel, or to refuse docetaxel. Docetaxel is the standard chemotherapy for metastatic CRPC that has been approved by the FDA since 2004. Blood counts and various metabolic parameters, including liver and kidney function, had to be either normal or close to normal. Patients were randomized to receive six intravenous doses (four weeks apart) of Rad-223 plus best supportive care, or placebo injections plus best supportive care. Best supportive care basically included a variety of secondary hormonal manipulations, but no chemotherapy was allowed and no other intravenous radio-isotopes were allowed. All patients continued on their Lupron, Eligard, Zoladex and Trelstar-type drugs so as to avoid a rise in testosterone (which is associated with disease progression in CRPC).

More than 900 patients were enrolled in the ALSYMPCA trial, but an early “interim” analysis was performed to ensure that safety and ethical issues were appropriate for trial continuation.

Surprisingly, this interim analysis (performed after 314 deaths) demonstrated a strong and positive survival advantage for those treated with the radium-223. In the interim analysis, patients in the placebo group lived a median of 11.2 months, while the patients in the radium-223 group lived a median of 14.0 months (5). Please note that this trial, along with every other trial has considerable heterogeneity around the median. This compares favorably with other trials performed predominantly in patients previously treated with docetaxel (3,4). The probability of this result being due to chance was less than 2 in 1,000. A final analysis has recently been reported with more follow-up: The median survivals improved with the placebo group living a median of 11.3 months and the radium-223 group treated a median of 14.9 months (8).

The positive survival results led to the trial being stopped at the interim analysis. It was considered unethical to continue to treat people with placebo, given the extent of the survival advantage with radium-223. In addition to improved survival, the overall safety profile of the radium-223 was excellent. The side effects were unusual, with less adverse events being reported in the placebo arm. Bone marrow suppression, though a potential significant toxicity, was rare (less than 5% of patients).

SUMMARY

Radium-223 will be reviewed by the FDA sometime in 2012. If the FDA approves the drug, it should be available shortly thereafter in selected centers. The current “expanded access trial” has been approved by the FDA in accordance with strict guidelines similar to that of the large phase III trial. This expanded access trial is now open in select cities (please see page 26 for current availability). Exact dates depend on the approval by local Institutional Review Boards and other regulatory agencies.

It is clear that radium-223 will be used in combination with other agents for patients with CRPC. Combining it with various newer hormonal agents seems logical. Combinations with docetaxel (Taxotere) will need to proceed in clinical trials first, as there are unknown safety issues that could be encountered. There is a good rationale for combining radiation with immune modulators, and these trials will begin in the not too distant future. Most other cancers are treated with multiple agents in combination, and prostate cancer will follow this paradigm in the near future.

Radium-223 may be the first step in new therapeutic approach to prostate cancer, and other cancers as well. Alpha particles will prolong survival when properly targeted, providing an important proof of concept.

CONTINUED ON PAGE 14

RADIUM-223 (continued from page 13)

The next challenge is targeting these particles to regions of cancer outside the bone. Various antibodies and other targeting agents may be conjugated together with alpha-emitters to form new targeted forms of radiation therapy. ♦

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MEET THE STAFF

Travis Hartman, Web & Social Media Intern

Travis Hartman joined PCRI as Web and Social Media Intern in April 2012.

He is responsible for maintaining PCRI's website (www.PCRI.org) and social media presence on Facebook and Twitter. He has been designing and hosting websites since 2005.

He has experience with search engine optimization (SEO) and marketing for websites, as well as experience in sales and customer service. He is currently a Business Administration major who will graduate in 2013.





Helping Men Know Their Options

Prostate Cancer Research Institute

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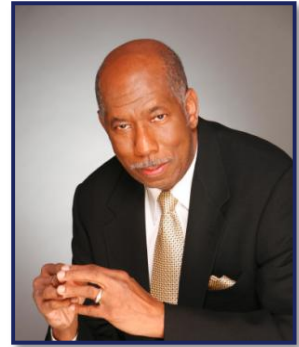
May 18, 2012

Dear PCRI Supporter,

When was the last time you attended a conference and left feeling enlightened, informed, encouraged and rejuvenated? Was it last year's PCRI conference?

The annual PCRI conference is a "safe haven" where you come together with a family of men and women from all walks of life and from all over the world, to discover and gain valuable knowledge about the mysteries and marvels found in the challenging world of prostate cancer.

PCRI is propelling an evolving environment of learning and revelation, ranging from breakthroughs in research science to exploring cutting-edge developments in new treatment options. The September conference is just one of many exciting programs PCRI produces in these efforts.



In addition to this inspiring event, PCRI also runs a Helpline for patients and advocates, publishes educational newsletters, supports research and provides patients with an online forum, the PCRI Blue Community, to ask questions and connect with one another. PCRI has also recently launched the following new initiatives:

- **Mentoring Program:** Support groups are often one of the first places men turn to for help and guidance. PCRI is proud to offer a new online training course specifically geared towards the leaders of these support groups, which features webinars by some of the world's most respected physicians on the different types of prostate cancer and their treatment options.
- **Dash4Dad Race:** This Father's Day weekend, PCRI will partner with ZERO – the Project to End Prostate Cancer for its first-ever 5K race. This awareness event will be held at beautiful Dockweiler Beach, and will feature prizes, food and fun for adults and children. Join us Saturday, June 16 and lace up your sneakers to end prostate cancer!
- **Website/Social Media Development:** In addition to printed educational materials, PCRI also uses multimedia outlets to communicate with and educate patients. This includes PCRI Weekly (a weekly web-only newsletter); active involvement on social media sites such as Facebook and Twitter; and continuous improvements to the content and design of the PCRI website, www.PCRI.org.

In order to continue providing the prostate cancer community with these resources, PCRI needs ongoing financial support. The annual conference is just one of many programs you can support with a generous contribution to PCRI.

In my time as a PCRI board member, I have gained a heightened understanding of the dynamics and perils of prostate cancer. I too have been personally affected by the experiences of my close relatives, including my brother, who is a prostate cancer patient. I now know and understand the value of awareness.

Please help support PCRI programs with a contribution in the enclosed envelope. Your contribution is invaluable, and will be used towards programs that continue to benefit patients, families and advocates. See the next page for planned giving options.

For more detailed information about the 2012 conference, please visit our website at www.PCRI.org. We'll save a seat for you!

Sincerely,

Jerry Peters

Grammy winner Jerry Peters currently serves on the Board of Directors for the Prostate Cancer Research Institute. Peters is known and respected in the music world as a versatile composer, songwriter, producer and pianist. Peters has been in the music industry for more than 46 years, and has made creative contributions to virtually every genre of music, from R&B to gospel, jazz and classical. In 2011, Peters received his own Grammy Award and was also nominated for a 2011 Dove Award.

Prostate Cancer Research Institute is a 501(c)(3) not-for-profit charity

Planned Giving:

The Many Ways to Give to PCRI

Planned Giving can benefit you, your loved ones and the fight against prostate cancer. A well thought-out planned gift enables charitable donations at a level that you might not thought possible, while maximizing tax benefits for you and your family.

Bequests – The most common and simplest form of planned giving, a bequest is a gift that is made through a donor's will. Individuals may include Prostate Cancer Research Institute in his/her will by naming PCRI for either a specific amount or a percent share of his/her estate. A donor can also name PCRI as the residual beneficiary of his/her estates after payment of bequests to others.

Life Insurance – You can name PCRI as the primary beneficiary or a successor beneficiary of a life insurance policy. Your estate will be allowed an estate tax deduction. You may wish to donate to PCRI a policy that you may no longer require and receive immediate income tax deduction for the value of that policy.

Charitable Lead Trust for a Certain Term (CLT) – CLT's are the most appealing to donors who want to pass appreciated assets to their heirs without paying a substantial amount in taxes. This is done by allowing PCRI to receive income from the donor's assets for a specific time, after which the asset is transferred back to the donor or the donor's heirs, who do not pay any additional taxes.

Charitable Lead Unitrust for a Certain Term – This type of trust is a custom designed and individually managed trust that enables you to give a variable amount to PCRI for a fixed term of years or the life of one or more individuals.

Life Estate Agreement – An arrangement whereby you transfer title to a personal residence, farm, or yacht to a charity while retaining the right to occupy and otherwise enjoy the full use of the property for your choice of a term of years or the lifetime of one or more individuals.

Individual Retirement Account (IRA) – An IRA is one of the most tax-efficient assets you can leave to charity. If you leave the assets of your IRA to your children or other heirs, they will have to pay income tax on the distribution, in addition to estate taxes your executor may have already paid. If you leave the assets to PCRI a qualified charity, this double taxation is avoided. This method is very simple, requiring only a change of the beneficiary designation using the appropriate form.

Charitable Gift Annuity – This is a contract under which PCRI, in return for a transfer of cash, marketable securities or other assets, agrees to pay a fixed amount of money to one or more individuals, for their lifetime, not a term of years. The person who receives payments is called an "annuitant" or "beneficiary". The fixed payments (called the annuity) are fixed and unchanged for the term of the contract. The annuity payments are NOT called "income" for a portion of the payments are considered to be a partial tax-free return of the donor's gift, which are spread, in equal payments, over the life expectancy of the annuitant.

**Prostate Cancer Research Institute is a 501 (c)(3) not-for-profit charity whose mission is to promote public awareness, education and supporting prostate cancer research*

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Maintaining Your Medical Records



Options for Saving, Carrying and Sharing Your Files

Jan Manarite, *PCRI Senior Educational Facilitator*

Madhu Rajaraman, *PCRI Senior Writer-Editor*

Silvia Cooper, *PCRI Educational Facilitator*

Obtaining and maintaining copies of your medical information is an important part of understanding your cancer and your treatment options. It's also

a critical part of “new patient appointments” with physicians, ensuring you are equipped for emergencies and asking your doctor(s) the right questions in context of your individual biology.

Traditionally, physicians have kept medical records on paper. Doctors typically retain folders or clipboards full of papers containing test results and notes. Receptionists may have filing systems that more closely resemble Mount Everest or the Library of Congress.

But as is the case with most industries, we have seen a shift in recent years from paper to digital, computerized record-keeping. Perhaps your doctor now sits in front of a laptop instead of an open folder during your visit, and types on a keyboard instead of writing with an ink pen. Depending on the clinic and the physician, you may encounter doctors that operate both ways. But the shift to computers is evident.

As physicians increasingly move in the direction of paperless record-keeping, it can be beneficial for patients to keep up with this trend accordingly – especially in an emergency, when having a portable device containing valuable medical data might be more practical and portable than a stack of papers. Although some medical records are still faxed, keeping a computerized record of your medical history can save time, space, paper and hassle. This can translate into benefit for the patient.

One method of maintaining your records in a computerized method is to have documents scanned and downloaded onto a compact disc (Figure 1). You may already have a CD of your imaging, such as a bone scan, MRI or CT scan, as radiology clinics sometimes supply these to patients. You can also use CDs to store copies of paper documents.

Another method of storing your records is with a USB flash drive (Figure 2). You may already be familiar with this type of device, which is commonly used to store documents and files for both personal and professional use. The size, portability and storage capacity of the USB drive may help eliminate the hassle of carrying around a folder full of papers, which could quickly get cumbersome or impractical in an emergency situation.

Since this is a developing shift in clinics and hospitals, it would be advisable to call your clinic or hospital before a visit to see if they would utilize a CD or USB flash drive. (It does not matter whether they have a Mac or a PC computer). It may also make sense to carry both paper and a computerized device until you are sure the CD or flash drive works effectively for you in a given situation.

(continued on page 18)

Maintaining Your Medical Records

CONTINUED FROM PAGE 17



FIGURE 1: compact disc (CD)



FIGURE 2: USB flash drive

Many companies now sell USB flash drives geared specifically towards patients, which often include a wristband, keychain, and/or identification card for easy accessibility in case of an emergency. Some popular brands include the following:

Medic Life Alert (www.mediclifealert.com)

PPEMR, Inc. (<http://www.personalportableelectronicmedicalrecords.com/Products.html>)

USB Medical Data (<http://www.usbmedicaldata.com/>)

PCRI recognizes the increased role of technology in the medical world, and encourages patients to keep an up-to-date record of all their data. PCRI has partnered with Medic Life Alert in a fundraising effort to educate patients about the importance of maintaining their medical records.

As an added incentive, with your purchase of a Medic Life Alert USB drive for just \$24.95, **PCRI will receive a donation of 10% of all purchases made!** So take advantage of this opportunity to digitize your data and support a worthy cause. Please call PCRI at 310-743-2116 for more information.

Whether it's a bone scan report, blood PSA result or any of the many other records that will be generated on the prostate cancer journey, it is imperative that you keep track of your records.

While advocating for my father, I found that it was easier for me to ask for copies of his records than it was for him to do so (HIPAA law requires the patient to ask - so make sure they're with you, or ask the clinic about a permission form.). It is common for patients to feel that once the physician has gone over the report with them, there is no need to obtain a copy. They may even have a mindset where they think to themselves, "it's almost an insult to the doctor if I ask for my records."

This mindset needs to change! Maintaining your records is one of the first steps in patient empowerment.



Silvia Cooper

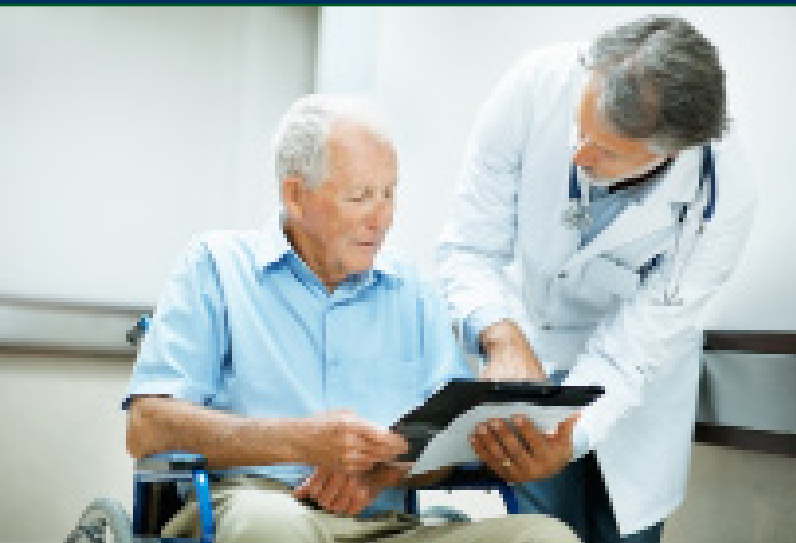
I discovered a system for keeping my dad's records that worked well for us. Towards the end of his treatments, I was introduced to the Medic Life Alert USB flash drive. Since we have entered the 21st century and the age of technology, it made sense for us to keep track of our records accordingly. Hence, I backtracked and revisited each of my father's doctors to request that his records be downloaded onto our flash drive.

As each office's computers and record-keeping systems varied, so did our experience with obtaining digital records. In some offices, it was a breeze to download the information, whereas in others, it took more effort. However, if you begin your doctor visits with the flash drive, it should not be difficult for any office to accommodate your request.

Upon the initial consultation, just bring the USB drive with you and advise the nurse or physician that you will require all your records be downloaded at the end of your visit for you to take home. You also have the option of obtaining paper copies and then scanning them to your flash drive, so that you have both paper and electronic records readily available.

My father and I used the Medic Life Alert system to store our records, and it has worked well for us. Other brands are also available, if you wish to shop around first.

Good luck and good record-keeping!



Understanding Your

BONE SCAN

and other bone imaging



JAN MANARITE,
*PCRI Senior
Educational
Facilitator*

Understanding your medical records is an essential part of patient empowerment. (For more on this subject, please see the 2010 PCRI *Insights* article titled “Making the System Work for You: Principles of Empowerment”.) In connection with the article on Alpharadin (Radium-223) on page 9, this piece will focus on understanding bone imaging better, with a primary focus on the conventional bone scan.

Without an understanding of your medical records, you are likely to research the term “prostate cancer” alone, which can lead to a bottomless well of impersonal information. With some understanding of your records, you will learn to research prostate cancer in context of your own biology – your own pathology, PSA pattern, imaging results, and prostate size, to name a few factors.

This research leads to the understanding you need to develop questions for your physician(s). The quality of your understanding will shape the quality of those questions, and the quality of your questions will determine the quality of your answers. Therein lies empowerment.

For years, PCRI has focused on the fact that no two prostate cancers are alike. Research has taught us that new science is likely to discover more and more diversity (1). Isolated characteristics may be the same, but many characteristics are different.

Medical records provide facts, details and specifics that illuminate the characteristics of your cancer. Imaging of the bone is one such medical record. The most common type of bone imaging is the standard bone scan, but F18 (and sometimes FDG18) PET scans have also seen more widespread use in recent years. In addition, CT, MRI and X-ray are occasionally used for supportive or backup imaging of bone.

Besides being common protocol, the bone scan is also the imaging utilized in Alpharadin clinical trials. It involves an injection made up of a “radionuclide” (low-dose radiation), plus a “pharmaceutical” – a simple definition for a “radiopharmaceutical” (2). The name of the radiopharmaceutical used in bone scans is Technetium 99m. This term is often seen in the title of the bone scan report.

(continued on page 20)

Bone Scans & PSA

There is ongoing debate over what a PSA level should be before ordering a bone scan, especially in context of health care costs. There have been studies, arguments and statistics on this topic, and despite variations in opinion, one thing remains clear: The patient should always be the most important consideration in the decision.

To editorialize for a moment, I personally believe that PSA alone should not determine whether a prostate cancer patient should have a bone scan. We know, for example, that higher Gleasons often make less PSA. NCCN guidelines support this by including both Gleason and clinical stage in the decision of whether or not to scan (3).

I know someone who is a terrific advocate, whose husband had a bone metastasis with a PSA of 1.5 at diagnosis. But his Gleason was 9 (5+4). The bone metastasis was validated with pathology from needle biopsy – so there was no question that imaging found a cancer metastasis. I was glad they did not make their decision to do scans based on PSA alone. The patient's whole biology was taken into consideration.

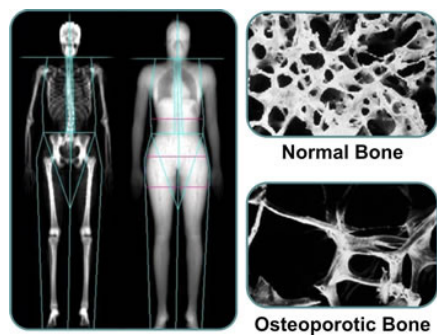
I have a Helpline caller who chose prostatectomy as his initial treatment. His cancer was more widespread at surgery than originally thought, and his Gleason turned out to be 8 (4+4). His PSA crept up quickly after surgery, and with a PSA of 2.1 he had a positive bone scan. I was glad he did not make his decision to order a bone scan on PSA alone, and found his metastases early. He has become a very empowered patient who is now doing extremely well.

After 12 years of doing this with my own husband, and after 10 years of working for PCRI, I believe that making the decision to image – or not image – is more scientific and reasonable if the entire biology is taken into consideration, rather than the PSA alone.

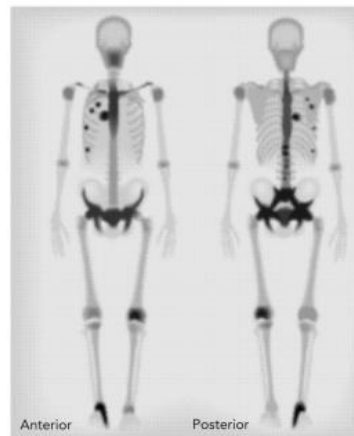
Bone Scan vs. Bone Density Scan

It is important to note that a bone scan, which looks for bone metastases, is different from a bone mineral density scan, which looks for osteoporosis. These two are often confused (See Figure 1, Table A and Table B).

FIGURE 1



Bone Mineral Density Test –
looks for osteoporosis



Bone Scan – looks for cancer in bone

(continued on page 21)

Who Interprets my Scans?

It is also important to understand that every medical imaging performed (BS, PET, CT, X-ray, MRI, etc.) is read by a physician, and a dictated written report is issued. This interpreting physician will be either a radiologist or a nuclear medicine physician.

So although the scan may be ordered by a urologist, medical oncologist or radiation oncologist, the physician who interprets the imaging is someone different. He or she is an M.D. trained in a different area of medicine (radiology or nuclear medicine), and does not see patients in a clinic. Their job is to read, decipher and translate imaging into a dictated written report, which they provide to your ordering clinical physician.

The difference between radiology and nuclear medicine is basically whether or not a radiopharmaceutical is used. These injections are designed to adhere to certain types of tissues (cancer being the most common), and reveal a spot or uptake in that area.

For example, the bone scan is nuclear medicine, and cancer in the bone is revealed as a “hot spot,” or excess uptake of the radiopharmaceutical. PET scans are also nuclear medicine, and there are many different types of radiopharmaceuticals used – which dictate the type of PET scan. F18 and FDG18 are currently utilized for bone imaging in the U.S. for prostate cancer.

A CT scan, on the other hand, may also involve an injection, but it is not a radiopharmaceutical, so CT is radiology, not nuclear medicine. MRI is radiology, even if an injection is used (gandolinium, feraheme, etc). Ultrasounds and X-rays are radiology.

A Radiologist is a physician who reads and interprets imaging – he does not treat patients with radiation.

A Nuclear Medicine physician also reads and interprets imaging, but works primarily with “Nuclear” imaging, which requires radioactive isotope injections, such as bone scans, PET scans, etc.

A Radiation Oncologist treats patients with radiation.

Written Report vs. Actual Images

The dictated written report is the medical record you can use to research your disease. There are also actual images (usually on film or CD), but these cannot be read accurately by an untrained eye.

The terms on these dictated written reports will be unfamiliar – but the definition of anything can be researched online. Google it, Bing it, Yahoo! it, or Ask Jeeves - doesn't matter. Just search for the definitions. They are easy to access on the internet, and explanations can usually be found in simple language. If you don't use the internet yet, this is a great time to start.

Why reading and understanding the basics of your bone scan report can be empowering:

- Correlating your imaging with PSA or CTC can help you understand your disease better. Does your imaging improve when your PSA or CTC improves? (PSA improvement usually precedes imaging improvement.) This may help you develop better questions moving forward in your treatments.
- Correlating imaging with pain can help you understand whether or not your pain is cancer-related. One fear many cancer patients have is that every new pain may be new cancer. If you know what your imaging says (and doesn't say), then you have something objective to help you face those fears. Fear turns into understanding, and the new pain is often not cancer, but something else.

- How do you know if you are eligible for some treatments, such as Alpharadin? Or perhaps another clinical trial you are considering? Knowing what your bone scan says will give you the knowledge you need. Of course, this also needs to be discussed with your physician(s).

The idea here is not to know all the answers, but to develop better questions, which should lead to better answers.

(continued on page 22)

BONE SCAN *(continued from page 21)*

To help you understand what your bone scan report means – and doesn't mean – here are some explanations of what can be found on a typical report.

Sections of a Bone Scan Report

Title

The title of the bone scan document can have different terms.

In fact, sometimes it doesn't even say "bone scan", so this can be confusing. You may often see "Whole Body", or WB. You will usually see a reference to the injection used (Technetium 99m), and may also see the term "Nuclear Medicine". These are all common words in the title of a bone scan report, and no two titles are exactly the same. It seems odd, but it's true.

Table A

Different TITLES found on Bone Scan (test for cancer in bone)	Different TITLES found on Bone Mineral Density Test (test for osteoporosis)	Different TITLES found on F18 PET Scan (test for cancer in bone)
Whole Body or WB	DEXA or DXA (Dual Energy X-ray Absorptiometry)	Positron Emission Tomography
Nuclear or Nuclear Medicine	qCT (quantitative CT scan)	Nuclear or Nuclear Medicine
Technitium 99 or Tc 99; MDP or HDP	qUS (quantitative ultrasound)	Na-18F or F-18 or NaF
Bone Scintigraphy	Bone Densitometry	Sodium Flouride
SPECT (sometimes fused with this type of CT imaging)	Bone Density	PET/CT (often fused with CT imaging)

Date

Always make sure you circle the date that your imaging was performed. This may sound simple and obvious, but it is often overlooked. If you can't quickly find the date on a medical report, you can't use it effectively.

Remember, you will keep your medical records now, but try to come back to them later. What important points do you want to access quickly?

Comparison

It is always important to have any imaging compared to previous similar imaging.

Bone scans should be compared to previous bone scans, because the change between two scans can tell you more than a single report can. If a previous bone scan was done at a different location, the current radiologist reading your images may not have access to the previous bone scan, or even know it exists - unless you (the patient or advocate) show them. Make sure your bone scan, PET and any other imaging is compared to previous scans. This is usually indicated on the report, just under the title.

Findings

This is where the radiologist or nuclear medicine physician dictates everything he sees in paragraph form. There will be mention of unremarkable (normal) findings, suspicious findings and definitive findings.

BONE SCAN *(continued from page 22)*

A critical point to remember here is that no medical imaging is perfect. They all have different strengths and weaknesses, depending on (1) what the imaging is looking for, and (2) what part of the body the imaging is looking at. In the case of the bone scan, there will be “uptake” anywhere there is new bone formation. This is not always 100% cancer.

Uptake will also show where there is degenerative disease, previous fractures and sometimes arthritis. A good example of this is bone scan uptake in the knees or feet that are common arthritic changes, but negligible for cancer metastases. All of this will be discussed in the section on your report called “Findings”. Read it carefully, and research anything you don’t understand before you ask your physician(s).

One of the most important statements in this section can be if something on the bone scan looks suspicious, but not definitive. If so, follow-up imaging such as MRI or X-ray is usually suggested. If follow-up imaging was suggested, but somehow not carried out, this is an important question to ask your physician(s) about. I have seen this happen more than once.

Impression

This is where the radiologist or nuclear medicine physician dictates what he sees in an abbreviated summary, and basically consists of the significant conclusions.

Here are some common words you will find (See Figure 2 and Table B):

Cervical, or C1 – C7. These are the 7 spinal vertebrae in the **neck**.

Thoracic (also Thorasic) or T1 – T12. These are the 12 spinal vertebrae in the **middle/main part of the back**.

Lumbar or L1 – L5. These are the 5 spinal vertebrae in the **lower back**.

Sacrum or S1 – S5. These are the 5 spinal vertebrae in the **tailbone**.

Other bones mentioned may be the **ilium** (pelvic bones), **femur** (thigh bone) and **humerus** (upper arm bone).

Obviously there are more, but they are too many to mention. All can be researched online.

Osseous – another word for bone.

Blastic/Sclerotic – the type of bone metastasis that looks like a buildup of bone, or a bump. The overwhelming majority of prostate cancer bone metastases are blastic (or sclerotic). This is the type of metastasis that Alpharadin can treat.

Lytic – the type of bone metastasis that looks like a loss of bone, or a dent or hole. Most other cancers have bone metastases that are lytic. This is the type of metastasis that Alpharadin cannot treat effectively.

(continued on page 24)

A critical point to remember is that no medical imaging is perfect. They all have different strengths and weaknesses.

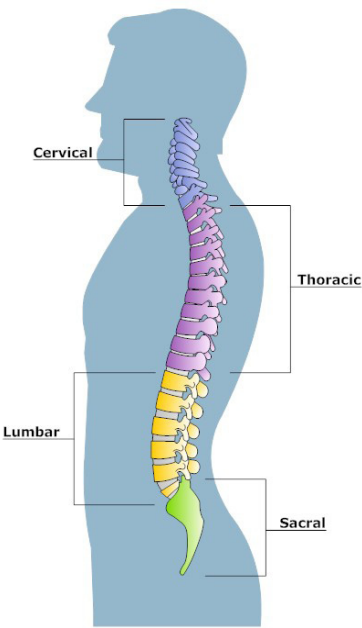
What are you doing this **Father's Day** weekend?

Join PCRI and ZERO - The Project to End Prostate Cancer for the **DASH4DAD** 5K race and fun walk!
Saturday, June 16, 2012 • Dockweiler Beach, Playa del Rey, CA • 9:00 am-noon
Visit www.dashfordad.org/races/SouthBay for details and to sign up! See page 28 for more information.

FIGURE 2

The Spine

SmartDraw



Signature

The radiologist or nuclear medicine physician will sign the report. Also look for page numbers – it may say “page 1 of 2” or “page 1 of 1”, etc. Make sure you have all the pages to your dictated written report from your bone scan.

Table B

Different TERMS found in Bone Scan Report	Different TERMS found in Bone Mineral Density Report	Different TERMS found in F18 PET Scan Report
uptake	T-score and Z-score (T-score is more important)	uptake or SUV (standard uptake value)
osseous (of the bone)	BMD	osseous (of the bone)
blastic or sclerotic	bone mass	blastic or sclerotic
lytic	osteoporosis	lytic
metastatic	osteopenia	metastatic

PET Scan for Bone

In recent years, PET imaging and PET/CT-fused imaging have become more commonplace for imaging bone metastases for prostate cancer. In some clinics, it has replaced the bone scan.

This may be temporary, as the future of insurance reimbursement is uncertain. Currently, Medicare has been paying in most areas of the United States because of a National Oncologic PET Registry (NOPR) for F18 (or FDG 18) PET scans which started in January 2011. (4,5)

(continued on page 25)

To date, the wording in the NOPR coverage for PET in prostate cancer reads like this (6):

NOPR Medicare Reimbursement for PET in Prostate Cancer (subject to change)

Table C

Indications	Initial Treatment Strategy (formerly Diagnosis and initial Staging)	Subsequent Treatment Strategy (includes Treatment Monitoring, Restaging and Detection of Suspected Recurrence)
Prostate	NC (non-covered nationally – Not eligible for entry in the NOPR)	NOPR (covered only with entry in the NOPR)

There are many different types of PET scans, because the type of scan depends on the type of radiopharmaceutical administered. In other words, an F18 PET scan is different from an FDG 18 PET scan, because the injection used is a different radiopharmaceutical. These are the two types of PET covered in the NOPR. If you had a PET, it is likely one of these 2 types.

Studies show that F18 and/or FDG18 PET scans have better accuracy than traditional bone scan in finding bone metastases in prostate cancer. (6)

Follow-Up & Additional Bone Imaging

If the physician who read and signed your bone scan report found something that he thought to be suspicious, but not definitive, he may suggest ordering additional imaging to rule out cancer metastasis. You will probably find different clinical opinions on what type of imaging is most useful, or even on when follow-up imaging is necessary. But here are some pointers that can help in your understanding.

CT Scans – CT or CAT scans can also read bone. In years past, a CT used to image a prostate cancer patient often made no mention of bone findings, and simply commented on soft tissue and lymph nodes.

It does seem there is a pattern of more radiologists reading what they see in bone on a CT than in previous years. This can be a helpful correlation with the bone scan. If the CT was performed on the same day as the bone scan, it is a good question to discuss. This is probably common. If a PET scan is used to image bone, a CT is often used in conjunction with the PET.

MRI –Magnetic Resonance Imaging (MRI) is sometimes suggested for follow-up imaging. Since MRI can visualize bone marrow well, it is sometimes ordered to image suspicious findings in the spine.

X-ray – Also called “plain films” or AP, X-rays are occasionally ordered as follow-up imaging if a bone scan finding is suspicious but not definitive for cancer.

You may never understand your bone scan report like a physician – I don’t. But you can certainly understand it as an empowered patient – I do.

(continued on page 26)

Don't be intimidated by large words that look like another language, because they're not. They change from foreign to familiar when you find the definition.

Remember that empowerment lies within these records, because that's where your biology lies. Keep in mind that the quality of your answers depends on the quality of your questions. Remind yourself that you've done greater things than learning to understand medical records – so you can do this too. Remind yourself that empowerment quenches fear, and understanding is the road to empowerment. ♦

References:

- (1) Taylor, et. al. Integrative genomic profiling of human prostate cancer. Cancer Cell 2010 July 13; 18(1): 11-22
- (2) Nuclear Medicine - *Society of Nuclear Medicine* glossary
- (3) NCCN Clinical Practice Guidelines, Prostate Cancer. Version 2. 2012
- (4) Segall G., NaF PET/CT Bone Scans, Presentation 2011
- (5) National Oncologic PET Registry: Information for Patients,
- (6) National Oncologic PET Registry: FCG Indications: Cancer and Indications Eligible for Entry in the NOPR

Alpharadin: Current Availability Through Expanded Access

This information is current, temporary, and subject to change – May 2012

Jan Manarite

Early/Expanded Access Committee

PCRI Senior Educational Facilitator

Clinical Trials: Current Availability

If you think you fit the criteria below, please contact the following people for more information and further screening:

New Orleans

Phone: (504) 988-2735

E-mail: osartor@tulane.edu
pcotogno@tulane.edu

Las Vegas

Phone: (702) 952-3400

E-mail: nvogelzang@nvcancer.org
victoria.le@usoncology.com

Alpharadin® is pending FDA approval, which is expected by the end of 2012. In the meantime, it has been made available through a program called **Expanded Access**, which is similar to a loosely designed clinical trial with no placebo. This means not everyone is eligible (see Basic Eligibility Criteria below). Men who are eligible will have similar disease characteristics to the men in the Alpharadin trials already conducted.

Expanded Access will make Alpharadin available in several states – but not every clinic in the US. Most people will need to travel. It also may take a few weeks to complete paperwork and screening for the program, but patients may help speed up the process by having their own medical records and offering to provide them to the clinical trial nurse. **Develop good communication with this nurse**, as this will help the entire process. As an empowered patient, think of this as a personal project, and invest some time and research in it.

Radium-223 Chloride (Alpharadin) in Castration-Resistant (Hormone-Refractory) Prostate Cancer Patients with Bone Metastases

Basic Eligibility Criteria:

1. **CRPC/HRPC** - on hormone therapy with **progressive disease**
2. At least **two bone metastases** - blastic (sclerotic), not lytic
3. **Some amount of pain/bone pain (must be taking meds – even if it's daily Tylenol)**
4. No mets to lung, liver, or brain
5. HGB 10.0 or higher
6. Previously treated with Taxotere (or have refused Taxotere – patient's choice)
7. **Four weeks since chemo**, and no chemo currently planned
8. No abiraterone (Zytiga) while on Alpharadin - previous OK
9. No previous Quadramet, Strontium 89, or extensive radiation to bone (> 25% of bone marrow)

More on Alpharadin Treatment

Alpharadin (Radium 223) is a low-dose radiation injection. It is a **radiopharmaceutical**, as discussed on page 19. The treatment is given in a clinic or hospital by a **radiation oncologist or medical oncologist** (or their administering nurse). The experience will be very similar to receiving a bone scan injection, which is a different type of radiopharmaceutical. Alpharadin is not an IV drip or an intramuscular shot.

Treatments are given once every four weeks. Patients are allowed to have up to six treatments. In the phase 3 ALSYMPCA trial, about 50% of patients received all six. (1)

Patients in the Alpharadin trial remained on secondary hormonal treatments of various type. They also continued treatment with Zometa or Xgeva if they were already receiving these therapies, but did not receive them on the same day as Alpharadin. Patients in the Alpharadin trials did NOT receive Zometa or Xgeva the same day of Alpharadin treatment.

Researchers will have to decide on the timing and sequencing, but since both treatments are often given in approximately one-month intervals, it should be easy to schedule with weeks in between Alpharadin and Zometa – or Alpharadin and Xgeva. As always, discuss with your administering physician(s).

Hydration

Patients who receive Alpharadin are asked to hydrate before treatment. Drinking plenty of water is the easiest way to hydrate, but certain foods can also help. For example, lettuce is 95% water, watermelon is 92% water and broccoli is 91% water. Other foods with high water content include soups & popsicles (2). Yogurt has a high water content and may have multiple benefits, since Alpharadin is excreted through the gut, or small intestines (3)(not the kidneys, like Quadramet), and diarrhea or nausea are possible side effects.

In contrast, some foods actually contribute to loss of fluids. Foods and drinks that contain salt, sugar, caffeine, or alcohol will cause loss of fluid – not hydration (4). And surprisingly, some healthy foods such as celery, asparagus, artichokes, and melons have a diuretic effect – so they also can add to loss of fluids.

Simple water consumption is probably the best remedy. Also, keep in mind that you can ask your medical oncologist for fluids, which can be administered by IV drip in most oncology clinics. A full bag of fluids may take 90 minutes, but a half bag can take less than an hour. Insurance usually pays, and it is relatively inexpensive. Ask your oncologist about this option, and consider working it into your treatment regimen or office visits. Fluids given by IV can make you feel better quickly, but the benefits also wear off quickly. Fluids consumed by drinking last longer in the body, but don't have the immediate benefit of feeling better quickly.

Side Effects

Side effects are often listed without percentages. This leaves a person wondering whether the side effect happened to 5% of people or 95%. Clearly this is an important difference. **Make it a habit to ask.**

With Alpharadin, some gastrointestinal side effects were documented, but most were mild. Diarrhea was experienced in 22% - but also in 13% of men who receive placebo (difference – 9%). There was also a 2% increase in nausea (compared to placebo) and a 4% increase in vomiting.

White blood cell drop (leucopenia) was only documented in 4% of men, and low platelets (thrombocytopenia) in 8%. This is dramatically less than what has been seen with Quadramet® (Samarium 153), where leukopenia was seen in 59% and thrombocytopenia was seen in 69% of patients (5). In addition, low hemoglobin (HGB), or anemia, was no different between the placebo group and the Alpharadin group. Again, this is an improvement over Quadramet, where a drop in HGB was documented in 17% more patients than the placebo group.

Overall, Alpharadin looks promising. The Expanded Access program will create some availability for patients (many will have to travel) while waiting for FDA ruling, expected before the end of 2012. As always, research Alpharadin personally, then check with your physician(s) to see if this treatment is right for you.

References:

- (1) C. Parker, et. al., Overall Survival Benefit of Radium-223 Chloride (Alpharadin) in the Treatment of Patients With Symptomatic Bone Metastases in Castration-Resistant Prostate Cancer (CRPC): A Phase III Randomised Trial (ALSYMPCA)
- (2) The Importance of Hydration. ASCO, www.cancer.net
- (3) Algeta Products. Alpharadin.
- (4) S. Lundman. What foods make you feel dehydrated? June 2011. LiveStrong
- (5) Daily Med. U.S. National Library of Medicine, NIH. Quadramet (Samarium SM 153 Lexidronam) injection, suspension

What are you doing this Father's Day?



Join PCRI and ZERO - The Project to End Prostate Cancer for the Dash for Dad - South Bay Race and Fun Walk!

This Father's Day, PCRI is committed to **bringing generations together** for our first-ever **Dash for Dad 5K race** at beautiful Dockweiler Beach! This fun-filled event will help support prostate cancer research and education. Give Dad the gift of awareness this year by joining PCRI and ZERO for this exciting event!

When: Saturday, June 16, 2012, 9:00 am-noon
Where: Dockweiler Beach, Playa del Rey, California

If you will be in the Los Angeles area this Father's Day weekend, don't miss out on the fun! Whether you are a seasoned athlete or a casual walker, Dash for Dad is a fantastic opportunity to raise awareness for a great cause. There will be food, prizes (including **a chance to win an iPad3!**) and fun for the whole family!

Visit www.dashfordad.org/races/SouthBay for more information and to register today!

Interested in volunteering on race day? E-mail Tom Gallatin at tgallatin@pcri.org to learn how you can help!



Are you a prostate cancer support group leader?

Join the **PCRI Mentoring Program**, a new online training course developed with you in mind!



Support groups are often one of the first places men turn to for help and guidance.

PCRI is proud to offer a new **online training program** geared specifically towards the leaders of these support groups, which features webinars by some of the world's most respected physicians on the different stages of prostate cancer and treatment options. Faculty for the mentoring program include:

- Dr. Mark Scholz
- Dr. Mark Moyad
- Dr. John Mulhall
- Tom Kirk of Us Too International
- Dr. Daniel Margolis
- Dr. Charles "Snuffy" Myers

and many others!

The Mentoring Program covers all the complex topics a man may encounter on his prostate cancer journey, including men's health, screening and biopsy, imaging, sexual side effects and much more.

Interested? Please call the PCRI office at **310-743-2116** to learn more.

Interested in
becoming a
PCRI Mentor?
Call **310-743-2116**
or e-mail
madhu@pcri.org for
more information!

Know someone who's making a difference in the fight against prostate cancer?



Harry Pinchot

Nominate him or her for the **2012 Harry Pinchot Award**!

Harry Pinchot was widely recognized as one of the most knowledgeable laymen in the biology, prevention and treatment of prostate cancer. Pinchot made a positive impact on the lives of countless men afflicted by prostate cancer, and their loved ones, through his efforts at the Prostate Cancer Research Institute (PCRI).

He served as PCRI's Program Director for over a decade, and was known as "**Helpline Harry**" because he was always taking calls from concerned prostate cancer patients. His devotion to the mission of educating men and highlighting the plight of those affected by the disease has earned him national recognition.

Harry Pinchot lost his 13-year battle with prostate cancer in January 2008. In his honor, PCRI would like to recognize unsung heroes like Harry that are out there making a difference in other people's lives. Winners from previous years included Howard Hansen, Johnny R. Payne, Bill Blair, Ralph Valle, Peter Doherty and Lyle LaRosh.

Only individuals may be nominated. These men and women will be judged by their accomplishments and personal attributes that show excellence in prostate cancer education, research, advocacy and community support.

The winner of the 2012 Pinchot award will be honored at the **PCRI conference Gala Dinner** the evening of September 8, 2012. If you are interested in nominating someone, please call 310-743-2116 for an application form. We look forward to hearing from you!

Food for Thought



By Verne Varona

Tofu & Vegetable Stir-Fry with Walnut Rice

This dish is an excellent source of whole fiber and complex carbohydrates, naturally reducing sweet cravings and containing valuable vitamins, minerals and trace nutrients.

Tofu & Vegetable Sesame Stir-Fry

Ingredients

2 carrots
1 onion
1 cup corn kernels (fresh or frozen)
5 bok choy leaves
1 1/2 cups snow peas
1 tbsp. safflower oil
2 blocks (2 lbs) fresh tofu
1 tbsp. tamari (or substitute Braggs Amino)
1 clove minced garlic
1/2 inch fresh minced ginger

Walnut Rice

Ingredients

3/4 cup shelled walnuts
2 cups long grain brown rice
4 cups filtered water
1/3 cup minced parsley
1/2 tsp. sea salt

Directions

Heat oil in a large skillet. Add wedged cut onions and cook for two minutes on medium-high heat. Add diagonally cut carrot and corn kernels to mixture and cook for another two minutes. Add cube-cut tofu, cover and continue to cook on medium-high heat, stirring frequently. After four minutes, add thinly sliced bok-choy, snow peas, ginger and chopped garlic. Stir for several minutes to bring to a finish. Add a dash of soy sauce to mixture and serve hot.

Directions

Dry pan-roast or oven-roast walnuts, 15-20 minutes until fragrant and golden. Add rinsed rice and all ingredients, except for parsley, in a medium-sized pot. Cover and bring to a boil. Lower heat and simmer for 45 minutes — or until the rice is tender. Remove from heat and fluff gently while mixing in the parsley.



Verne Varona has been a nutritional consultant, writer and researcher for over 35 years, and was a speaker at the PCRI 2011 conference. His books *Nature's Cancer-Fighting Foods* and *Macrobiotics for Dummies* offer practical advice on the healing aspect of diet. He is currently at work on a series of books about disease reversal.

For more information about Varona, visit his website at www.vernevarona.com.

Registration

ATTENDEE 1 – Primary Contact

Last Name _____

First Name _____

Address _____

City, ST, Zip _____

Country _____

Email _____

Telephone _____

FEES

	Price	Qty.	Total \$
Registration Fee			
Early (thru 05/31/12)	\$60		
Regular (thru 9/07/12)	\$120		
On-Site	\$150		
Saturday Gala Dinner	\$55		
Excursion			
Magic Castle (Friday)	\$120		
Getty Villa (Sunday)	\$35		
Subtotal			

Tax-Deductible Donation to PCRI**

	Level	Qty.	Total \$
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Sponsor	\$500		
Supporter	\$250		
Contributor	\$100		
Friend	\$50		
Other Amount			
Subtotal			
Total			

ATTENDEE 2

Last Name _____

First Name _____

The official conference hotel is the Marriott LAX Airport Hotel located at 5855 W. Century Blvd, Los Angeles, CA. A limited number of discounted rooms are available for \$92/night by calling 310-641-5700 and mentioning group code NCPNCPA, or by visiting www.PCRI.org for an online booking link. This group rate is available only until August 19, 2012.

Discounted airline tickets to/from LAX are available by calling American Airlines at 800.433.1790 or visiting www.aa.com. Use group code 5492BK.

Discounted car rentals are available through AVIS by mentioning code G028456 when calling 800.331.1600.

Self-parking at the venue is \$10/day and valet parking is \$25/day. Complimentary hotel shuttles are available at LAX (under the red sign).

Cancellations and refund requests will be honored only if made in writing no later than August 8, 2012.

METHOD OF PAYMENT

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Mail completed registration form and payment to:

5777 W. Century Blvd #800, Los Angeles, CA 90045
Or Fax: 310.743.2113
Or Call: 310.743.2116
Or Register Online at www.PCRI.org

**Prostate cancer will strike 1 in 6 men. Your generous donation helps us fight prostate cancer through research, education and increasing public awareness.



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