SPRING 2024

Journey EXPRESS

DATTOLI CANCER FOUNDATION

John Ryan Follows Countryman's Lead on an International PCa Journey

By Virginia Carnahan, APR, CPRC

John G. Ryan had never known anything other than a "normal" PSA reading (0.7 ng/ml), but when this busy native Canadian land developer started being inconvenienced by frequent urination, and then blood in the urine (hematuria), he sought a urologist's opinion. His local doctor found only a few polyps at the mouth of his bladder (the bladder neck) and determined these were not likely to be the cause of his urinary symptoms. A mini-TURP (transurethral resection of the prostate) was performed and John was surprised to find the tissues removed contained prostate cancer.

Further analysis of these tissues revealed a Gleason 9 malignancy associated with intraductal spread and lymphovascular invasion. This was a very aggressive cancer. Additionally, neuroendocrine tumor markers were positive, making this a very rare and aggressive variant indeed.

With this more complete – and potentially fatal – diagnosis, John's initial surprise gave way to shock, and so began his journey to find a solution.

He was referred to an oncologist, who confirmed that John would now be in the fight of his life – a fight *for* his life. The cancer was, indeed, rare and aggressive, and with no known treatment, only some drugs that might briefly prolong his fight.

At 63, John was still quite active in his business and community. He refused to sit back and let this cancer take his life. He knew he had many good years ahead of him, but only if he could defeat his cancer.

He began to search for information about treatment for his type of prostate cancer. He talked to friends, family and associates, and found that most of his contacts, when diagnosed with PCa, had opted for surgical removal. Some had gone the route of robotic prostatectomy, a procedure for which there are mixed results, at best. He was quickly overwhelmed by a fire hose of varying information, opinions and advice.

One evening, needing an escape from the drudgery of studying endless online articles about prostate cancer treatment, John picked up a book about investing advice, *Redefining Success: Still Making Mistakes*. The book's author, W. Brett Wilson, is a well-known fellow Canadian who had participated in several seasons of the Canadian Broadcast Company's popular "Dragon's Den" investing advice program. Somewhere in the book's introduction, Mr. Wilson mentioned his life-long battle with several different cancers, including a case of aggressive prostate cancer at the young age of 40. John reached out to Mr. Wilson and learned about his successful experience at the Dattoli Cancer Center in Sarasota, Florida.

It didn't take John long to make contact with the Dattoli team. He was amazed when Dr. Dattoli returned his call personally and spent over an hour discussing John's cancer. He agreed with John's local oncologist about the rarity and aggressiveness of this cancer, but contrary to the local doctor's opinion, Dattoli believed it was treatable. John would not take the drug that his Canadian oncologist had prescribed.

During their call, being somewhat of a "doubting Thomas," John asked Dattoli outright, "Are you talking about treatment or cure?" His response was, "I am talking CURE. Your game is not over!"

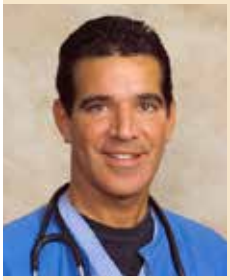
It did not take John long to make the decision to travel to Sarasota (nearly 3,000 miles from Newfoundland/Labrador where he lives). Dr. Dattoli arranged for John to have an Octreotide Scan, a type of nuclear medicine test that helps detect neuroendocrine tumors, in Orlando. Both he and John were relieved to learn from this scan that the rare, aggressive cancer had not spread!

When John arrived at the cancer center, he was impressed with the courtesy and professionalism of the staff. "Without exception," he recalls, "they were all comforting and encouraging." Even now, five years later, he can hear the voice of "sweet Pam" (Chief CT Tech, who operates the Center's GE LightSpeed Helical Scanner) calling to him, "Great job, Mr. Ryan" as he left the scanner suite.

With a renewed confidence sustained by his positive interactions with the Dattoli team, in 2019 John began a series of 42 sessions of Dynamic Adaptive Radiation Therapy (DART) radiation (unique to the Dattoli facility). This was followed by Palladium-103 brachytherapy (implantation of tiny "seeds" into the prostate gland and surrounding tissue). Afterwards he started a two-year hormone regimen, consisting of an injection every three months, along with other prescription and non-prescription anti-prostate cancer medications and supplements.

Once given no hope, John is now enjoying life to the fullest. "It may be an overused word," John proclaims," but I truly consider Dr. Michael Dattoli to be a life saver!" He will continue to see Dr. Dattoli annually for a checkup and to renew his friendship with the staff. He laughed in telling me that he would drive across Canada to Alaska to bring him a pizza if the doctor wanted one!

Since his Dattoli journey, John believes he has talked to 100 or more people about his experience. He knows of three gentlemen who have followed him from distant Canada to Sarasota, achieving the same excellent results.



Dear Friends:

I hope this brief newsletter finds you well. Spring is about to sprout here in Sarasota and we are very happy to see it!

We have been busy as usual. You can read in this newsletter about our latest published study, quantifying the highest cure rate and lowest amount of side effects in men having recurrent prostate cancer who had previous radiation. We are proud to have been a steady source of this type of factual data analysis shared with international journals for 26 years.

I'm happy to provide some information that will help you get to know Dr. Arvind Soni, who joined our practice three years ago. We are blessed to have his expertise and pleasant personality on board.

You will also be introduced to John Ryan, a hearty Canadian who wouldn't settle for the grim prognosis from his local physician. And I invite you to learn about "radiation hormesis," a fascinating side of radiation when it can actually be ***good for you.***

Lastly, I want to remind you that all the after-hours research at our Center is financed by the **Dattoli Cancer Foundation**, a 501(c)(3) not-for-profit organization. Your foundation donations make it possible for us to validate the data that underscores our reputation, and makes possible the important diagnosis and treatment research that happens here.

I am enclosing a donation envelope for your convenience, and encourage you to consider making a tax-deductible contribution – your personal check, a donation of stocks, or to be named in your will. You can learn more about the Foundation by checking its website: www.dattolifoundation.com

With sincere appreciation, I wish you happiness and good health.

Michael J. Dattoli, MD

"Good Radiation:" Does it Exist?

By Michael J. Dattoli, MD with Virginia Carnahan, CPRC

Over the past 126 years since the discovery of radium and polonium by Marie Curie in 1898, mankind has been haunted by the controversy regarding the benefits vs. dangers of radiation. In the early 20th century, a widespread phenomenon known as "radiophobia" or "radiomania" gripped most of the civilized world. This phenomenon exists even today, when otherwise educated people still refuse to accept the beneficial aspects of radiation. The fact that Marie Curie, the preeminent research scientist who devoted her life to understanding radioactivity, died of aplastic anemia thought to be caused by radiation poisoning (overexposure), contributed to world-wide radiation paranoia.[1]

Much of how we think about radiation emanates from past studies of the atomic bombings of the Japanese cities of Hiroshima and Nagasaki during World War II, and the death tolls associated with those terrifying events. There is certainly no shortage of interest in the atomic bomb, as evidenced by the recent popularity of the film *Oppenheimer*, which has served to perpetuate the stigma associated with radiation. In fact, it is the atomic bomb data from Japan that is often cited and used to justify the role of radiation in causing cancers (carcinogenesis) and increased cancer mortality.

But it is important to study the Japanese *survivors* of the atom bomb, and there exists a great deal of data on this subject. While it is correct that high doses of radiation to the entire body, which occurred and affected those survivors "in the city," may indeed be responsible to some degree for carcinogenesis, the opposite appears to be true with the lower doses of ionizing radiation that were received by those survivors "not in the city." This beneficial effect associated with low doses of radiation is called "Radiation Hormesis." There is compelling scientific and epidemiological data that low-dose radiation upregulates (strengthens) the immune system, and protects the host at the cellular and tissue levels, thereby reducing the risk of carcinogenesis and non-malignant diseases. And this protection may be long lasting.

To truly understand the impact that the atomic bomb had on survivors who lived "in the city," it is important to recognize that they were also exposed to other carcinogenic agents, including trauma from non-radioactive insults such as burns, non-radioactive toxins from the explosions themselves, and subsequent fires – all of which contaminated the food, water and air. These environmental stressors unrelated to ionizing radiation increased the risk for carcinogenesis and were responsible for many adverse health effects.

When studying "in the city" and "not in the city" populations in Japan, those "not in the city" who received lower radiation doses enjoyed a longer lifespan and reduced cancer mortality when compared to their non-irradiated peers in Japan, including Okinawans, who are often cited as people with the longest lifespans on earth.[2]

There is considerable evidence supporting the hypothesis that low-dose radiation reduces the risk of cancers, as well as non-malignant diseases.[3]

It is important for us to realize that the World Trade Center disaster of 9/11 released significant amounts of toxins into the environment resulting in an increased risk of certain cancers, despite the absence of radiation in that tragedy.[4,5]

Some startling evidence has been cited in a number of research papers on the 1986 Chernobyl disaster. For instance, a study looking at the incidence of cancer deaths in 8,600 cleanup workers at the site found that their death rate was 12 percent lower than the general Russian population. However, fear of radiation had a dramatic impact on the mental health of that population. There were as many as 1,250 suicides and 200,000 abortions due in large part to the psychological terror that ensued with the catastrophic events of Chernobyl.[6]

Another relevant radiation study involves the city of Taipei, where, from 1982 to 1984, 10,000 residents were moved into new apartments that had been constructed with steel bars contaminated by radioactive isotope cobalt-60. After two decades, the residents had received an average of 1.5 cGy (about 10 times the ambient radiation level in Taipei). In the first decade, the cancer mortality rate of these residents had dropped from 50 to 4 per 100,000, while the cancer mortality rate of the general population increased from 82 to 108 per 100,000. In the second decade the cancer death rate of the residents remained at 3 per 100,000, and that of the general population rose to 153 per 100,000. This particular study emphasizes the beneficial effect (hormesis) of the steady, daily exposure of low-dose radiation, in this case, from the cobalt 60-contaminated steel structure.[7]

Recently published reports on COVID-19 and its associated acute respiratory syndrome (ARDS), which is typically fatal, identified low-dose radiation delivered by chest X-rays and CT scans to rapidly reverse clinical symptoms and facilitate disease resolution. It is thought that low-dose radiation in these patients boosted systemic immune function while promoting an anti-inflammatory response.[8]

In regard to cancer diagnosis and monitoring, the fear of low-dose radiation exposure from CT scans and PET scans for initial evaluation and surveillance appears to be unwarranted. Indeed, the nominal amounts of radiation received by patients who undergo those diagnostic techniques may even be beneficial. Meanwhile, in patients receiving therapeutic radiation for cancer treatment, "out-of-field" radiation doses were relatively low and may actually provide protection against future cancers and diseases.[9]

There is a certain group that, by vocation, is knowingly exposed to extremely large radiation doses, apparently without detrimental effects. Astronauts are, in fact, exposed to approximately 250 mGy in a year. There are currently four veteran Apollo 11 Astronauts who are still alive and enjoying life in their 90's.[10]

Another example of the beneficial impact of Radiation Hormesis involves the populations living in the high altitudes of the Hunza Valley of Northern Pakistan. These "Hunza people" are believed to enjoy an average life expectancy of about 100 years (and many believe even longer), whereas the average life expectancy in lower altitudes of Pakistan is only 67 years. The Hunza Pakistanis receive low doses of radiation from radon exposure and increased background radiation from the sun, both as a result of their higher elevation. The hormesis effect of low-dose ionizing radiation is thought to stimulate the activation of biological repair mechanisms that protect against diseases, and thought to be the reason for the unusually long lifespans of the Hunza people.[11]

To fully appreciate all of these safety issues, those who consider radiation-induced cancer risks must also acknowledge non-radiation, confounding stressors. In answer to our leading question – "Good Radiation:" Does it exist? – we can assert a definitive, "*Yes!*" In low doses, radiation can certainly inspire beneficial effects on us, in many situations as illustrated by the studies and histories above. J

NEWS FLASH: At press time for this paper, news reporter Tom Gillespie published an article in Sky News, entitled *Chernobyl's mutant wolves appear to have developed resistance to cancer, study finds.* Following the nuclear reactor explosion in 1986, a 1,000-square-mile area around the nuclear accident site was evacuated and closed to the public. Now, 35 years later, Dr. Cara Love, an evolutionary biologist and ecotoxicologist from Princeton University, has tracked and studied native wolves in the area. She found that these wolves were exposed to 11.28 millirem of radiation every day of their lives – more than 6 times the legal safety human limit.

Her team also found that the wolves had an altered immune system and "genetic information that seemed resilient to increased cancer risk." It is thought that Dr. Love's work is adding to our ability to identify protective mutations that increase the odds of surviving cancer.

1 Wikipedia.org >wiki>Marie_Curie
2 Sotou et al, Genes Environ, 40:26; 2018.
3 Doss et al, Dose-Response JI, 10. 562-583, 2012.
4 Lieberman – Cribbin et al, JI Trasl Med, 16 (1) 280, 2018.
5 Dattoli et al. Dose-Response, JI 1-3 2020
6 Andrew C. Revkin, "Nuclear Risk and Fear, from Hiroshima to Fukushima," New York Times. March 10, 2012.
7 Chen, et al; Dose Response 2006 4 (3) 169-190. Radiation Hormesis: The Good, the Bad, and the Ugly.
8 Calabrese et al, Radiotherapy and Oncology Vol 147:212-216, June 2020.
9 Radiat Environ Biophys. 61(4): 485–504, 2022.
10 Scientific American, July 14, 2021.
11 Iran J. Sci Tech Trans Sci, June 2020.

Meet Arvind Soni, MD

Radiation oncologist Arvind Soni, MD, joined the staff at Dattoli Cancer Center over three years ago, and brought with him nearly three decades of experience treating prostate, skin and breast cancer utilizing the latest techniques, including various forms of targeted radiation therapy, brachytherapy, immunotherapy and a wide range of therapeutic radiopharmaceuticals.

His training, at Robert Wood Johnson Medical School and under the mentorship of Dr. Philip Rubin, one of the titans of radiation oncology, at the University of Rochester, prepared him to treat a variety of cancers in individuals of all ages. While he is comfortable treating pediatric, lung and brain cancers, he has focused on the two that generally impact the lives of men and women the most thoroughly: Prostate and breast cancer. Even with the advances of the last decade, treatment can potentially leave the patient with profound physical, functional and psychological side effects.

Dr. Soni believes that while the first goal in treating the patient is always to eliminate the cancer, an equally important challenge is to minimize any potential side effects of the treatment. He prides himself in helping people maintain their quality of life during and after cancer treatment.

During his tenure at Dattoli Cancer Center, Dr. Soni has streamlined the DART (Dynamic Adaptive Radiation Therapy) protocol to improve both the efficient use of patients' time and patient flow from the staff's perspective. He has also been instrumenta lin adding a third option for individuals, utilizing Cesium-131, as well as Iodine-125, and Palladium-103 for prostate brachytherapy. He is currently involved in creating a no-cost education program for patients and the public called "Prostate Café," designed to further inform attendees on prostate-related subjects, and cover other men's health topics as well.

Patients have grown to appreciate Dr. Soni's kind nature, breadth of knowledge in the fields of prostate and breast cancer treatment, and his compassionate follow-up care.

If you'd like to read more about Dr. Soni, visit the Dattoli Cancer website, which Dr. Soni has diligently monitored and updated since joining "Team Dattoli."

Encouraging Data For Long-Term Outcomes For Patients With Recurrent Prostate Cancer Published

An article submitted to the American Society of Clinical Oncology by the Dattoli team, *Long-term outcomes for patients with radiorecurrent prostate cancer treated with salvage combination IMRT and brachytherapy,* was accepted for presentation at the organization's annual ASCO Genitourinary Symposium in January 2024 and the abstract was published in the February 1, 2024 issue of the *Journal of Clinical Oncology.*

Over a 20-year period, Dr. Dattoli has collected data from 133 consecutive patients who had experienced a recurrence of their prostate cancer, proven by biopsy. These patients, ranging in age from 46 to 78, were treated between 2001 and 2021. Their previous treatment consisted of external beam radiation (Photons: 102 patients, Protons: 16 patients,) or Iodine-125 brachytherapy (15 patients).

Prior to salvage treatment, each patient underwent an extensive workup, which ruled out gross extracapsular extension or distant disease spread. Their recurrences were limited to the prostate gland. Salvage treatment consisted of an attenuated dose of IMRT to the prostate (1200 cGy) and adjacent tissues, followed by an attenuated Pd-103 brachytherapy boost (median 9000 cGy) within 24-72 hours.

The Pd-103 isotope was chosen, given its steep radial dose falloff, thereby reducing dosage to previously irradiated surrounding tissues. All patients were treated with a median 6 months of androgen deprivation. Mean pretreatment PSA was 5.9 ng/mL (range 1.9 – 22.3, median 3.9) with 64 patients having a Gleason score of 8, 61 patients had a Gleason score of 7, and 8 patients had a Gleason score of 6. Follow-up from date of implant ranged from 3 years to 20 years (median 14 years). Biochemical failure was defined using PSA greater than or equal to 0.2 and nadir +2 at last follow-up. All biochemically failing patients underwent transperineal prostate biopsies (median 18 cores).

Overall, 72 percent (96/133 patients) have maintained a PSA less than or equal to 0.2 ng/mL at median 14 years following this salvage treatment. Biochemical freedom at 5 years was 91 percent. PSA prior to retreatment was highly predictive of distant progression with no patient having a PSA greater than 15 being successfully salvaged. Prostate biopsies of failing patients revealed only 3 local failures. Four patients required post-implant TURP, and 2 TURP patients developed low volume stress incontinence, 2 patients developed urethral strictures, which were successfully treated to resolution. No patient has developed rectal ulceration, prostatic-vesicorectal fistula (an abnormal communication between the bladder urotheliumor and rectal mucosa) or chronic cystoproctitis (infection).

This study strengthens the rationale for the use of brachytherapy-based regimens in the treatment of radiorecurrent prostate cancer. In view of its shorter half-life, we are currently exploring the advantages of Cs-131 (Cesium -131) in these patients.