PROSTATE CANCER ACTION GROUP (S.A.) INC

Affiliated with
Prostate Cancer Foundation of
Australia

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NEWSLETTER

OCTOBER 2005

Chairman's Report October 2005

Awareness Evenings

Adelaide Metropolitan Area

The Evening held on the 14th September at the Cancer Council South Australia Function Room was a great success with an attendance of 134. Our Group conducted the presentation in collaboration with The Cancer Council SA who sponsored the Event. The key speaker was Prof. Villis Marshall who gave his usual excellent presentation. In particular I liked the very thorough way he answered questions from the audience in the Panel session towards the close of the Evening. I felt the range of speakers was very good with presentations from Dr Elizabeth Isenring (Flinders University) on nutrition, Dr Linda Foreman (Cancer Council SA) on a GP Education Program, Dean Wall and Ian Fisk from our Group. There was some criticism in the evaluation forms completed by the audience of the lack of vision of the screen. This was anticipated as the large number of people attending really stretched the capacity of the room. However a high percentage of the forms returned also stated the Evening was very worthwhile attending. At the close of the Event several people approached me with complimentary remarks on the presentation.

Our thanks to the Cancer Council SA for organising and sponsoring the Event, in particular to Margret Ryan who handled the bulk of the organisation and to Anne Milne for the assistance she gave.

Four Years of Awareness Evenings

As it is now nearly 4 years since our Group commenced a series of Awareness Evenings I feel it is timely to reflect on the outcome of these Events.

The initial function was held at Whyalla (Prof. Marshall also spoke at this Event). As I commenced the promotion we were thinking 30 would be a satisfactory attendance. The community nurse at Whyalla who assisted us stated 15 had attended a previous similar type of function (our attendance was 103).

At Victor Harbor we were shown a venue with a capacity of 60 and when we said that was too small, they looked at us in disbelief (the attendance was 129).

At our recent function at Kadina the people employed at the venue, the Farm Shed Museum & Tourism Centre, said the maximum they would expect for this type of event was 50 people (attendance was 128).

These are some examples of why I think we should be very satisfied with the results obtained. 15 Awareness Evenings in 4 years with a total attendance of 1542. 13 of these were conducted entirely by our Group (with local assistance) and 2 in collaboration with the Cancer Council SA.

For your interest I have detailed the results of each Awareness Evening as follows:

Date	Location	Number attending
26/11/01	Whyalla	103
8/02/02	Port Lincoln	120
18/04/02	Port Pirie	125
24/09/02	Victor Harbor	129
23/10/02	Mount Gambier	57
20/03/03	Port Augusta	93
22/05/03	Nuriootpa	101
9/09/03	Cancer Council-Adelaide	157
18/11/03	Salisbury	45

30/03/04	Woodville	69	
04/05/04	Berri	80	
03/11/04	Onkaparinga	31	
23/02/05	Mitcham	170	
19/08/05	Kadina	128	
14/09/05	Cancer Council Adelaide	134	(Total 1542)

It is interesting to note the attendance at the 3 Events conducted in 2005 totalled 432.
We now look forward to further awareness presentations in 2006. It is most important we continue to promote these presentations in an efficient manner. There is a lot of time and hard work involved but the results speak for themselves.

Grant Applications
Rob Kitto has now forwarded a further application to the City of Mitcham to conduct an awareness evening at Blackwood in 2006. The Council previously indicated they would consider such an application and we are hopeful of success.
I received a Statutory Declaration Form to complete in respect of our successful application for a video projector under the Small Equipment Grants 2005 and this was returned on the 27th September.

Mitcham Prostate Cancer Support Group
There was a slightly disappointing attendance of 15 at the September Meeting with several apologies received. 3 new to the Group attended.
I am pleased to report one of the members (Terry Harbour) has volunteered to compile a regular Newsletter and this will replace the minutes. Graeme Bradley has offered to take details of proceedings at the Meetings and John Francis has agreed to act as Treasurer.
Our guest speaker for the Evening was Barry Ferris who is a member of both the Mitcham Support Group and the Prostate Cancer Action Group and he was diagnosed with prostate cancer at age 49 – 6 years ago.
He was unable to have surgery as the cancer had spread outside the prostate and his treatment was by radiation and hormonal treatment. For some time this caused considerable side affects. Over the past 5 years his position has stabilised with his PSA now as low as 0.05 and he is able to lead a normal lifestyle.
Barry gave a very interesting presentation and answered questions from members.

The next Meeting will be held at 7.15p.m. on Thursday 27th October at the Colonel Light Gardens RSL Club. The guest speaker will be Lloyd Evans. Lloyd was a GP for approximately 50 years and since retirement has continued locum duties throughout the State. He also has a considerable involvement with the Royal Flying Doctor Service and has been a Board Member with that Organisation.
For more information phone Jeff Roberts on 8277 3424 or check our website on http://www.pcagsa.org.au

Health Seminar held 20th September
A free Health Seminar was held on the 20th September at the Fullarton Park Centre – 411 Fullarton Road. The key speaker was Dr Denby Steele and Ray Power from our Group spoke as a patient presenter. Topics covered included prostate health, incontinence and sexual functions. Unfortunately I had to leave part way through the presentation but thought Dr Steele made some interesting comments on the various aspects of prostate cancer.
About 25 people attended the Evening which was supported by American Medical Systems Australia.

Jeff Roberts

LIFESTYLE CHANGES CAN HALT PROSTATE CANCER

The strongest evidence yet has emerged that dietary and lifestyle changes can reverse the progression of early low-grade prostate cancer. Urologists described as “exciting” the results from a randomized, controlled trial that showed lifestyle interventions could significantly decrease prostate-specific antigen (PSA) and inhibit the growth of cancer cells.

More than 90 patients with low-grade tumours were randomized to the lifestyle intervention or usual care. At one-year follow-up, PSA had decreased in the intervention group but increased in controls. *(J. Urology 2005;174: 1066-70, Medical Observer, 19/8, p2.)*

Think again before cancer screenings, doctors warn

Adam Cresswell, health editor

HEALTHY people with no cancer symptoms should think carefully before undergoing cancer screening tests, because diseases they detect might never have been a threat and treating them can do more harm than good.

Modern tests, in which tiny tissue samples are examined under the microscope, are so sensitive that they can pick up more cancers than ever before, experts say.

But 30 to 40 per cent of all adults might test positive for some cancers using these techniques - and tests cannot tell the difference between cancers that will become dangerous and those that won't. , "

The result is that many patients handed a. cancer diagnosis undergo unnecessary fear and stress; and may undergo unpleasant and risky treatments such as surgery or chemotherapy for small cancers-that might not have come to light without the test.

Alex Barratt, associate professor of epidemiology at the University of Sydney's screening and test evaluation program, told *The Weekend Australian* that patients should remember cancer screening "is a two-edged sword!'. While existing public screening programs for breast and cervical cancer did have benefits, they and other cancer screening tests also caused harm.

"If you have a (cancer) symptom, you should get tested - that's a no-brainer," she said. "The tougher decision is whether to have a test when you are healthy.

"People need to understand that it's not always a good idea to have a test to find cancer early."

Gilbert Welch, professor of medicine at Dartmouth Medical School, in the US, is one of the experts interviewed on *The Health Report* program.

He says that using modern techniques, "about a third of all adults will have some pathological evidence of thyroid cancer; about 40 per cent of women in their 40s will have microscopic evidence of breast cancer".

"As we start looking for cancer early we're sending them (pathologists) smaller and smaller specimens, and they're really looking at just a few cells," he says on the radio program.

"And what is happening now is that we're finding these small abnormalities that meet the pathological criteria for cancer, but would never bother patients if they were left alone ... That's the real conundrum with cancer screening."

Many small cancers never grew, while some shrank. Others grew so slowly the patient may die of something unrelated before the cancer ever caused symptoms, he says.

Alan Coates, chief executive officer of The Cancer Council Australia, said screening "always does harm, and sometimes does good.

"We know in some diseases the good outweighs the harm - in breast cancer and bowel cancer, and we are almost certain in cervical cancer," he told *The Weekend Australian.*

But in other cases, such as testing for prostate cancer, a positive result "starts a cascade of pressure to do something about it" even though many of the detected cancers would prove harmless if left alone.

Helen Zorbas, director of the National Breast Cancer Centre, said "the evidence is very strong" that breast cancer screening programs reduced cancer deaths among women who participated, and that seven international trials and the World Health Organisation supported breast screening.*(The Weekend Australian, 20/8)*

RADIOTHERAPY IMPROVES SURVIVAL AFTER PROSTATECTOMY

Radiotherapy after radical prostatectomy significantly improves survival in locally advanced prostate cancer, a new study suggests. The study was the first to randomize patients to either postoperative radiotherapy or observation alone after radical prostatectomy, finding that, at five-year follow-up, radiated patients had a biochemical disease-free survival rate of 74% versus 53%. *(Lancet 2005; 366:572-78, Medical Observer, 19/8, p2)*

Obesity may increase prostate cancer risk

MEN who are overweight are more likely than thinner men to be diagnosed with aggressive prostate cancers that are less likely to be detected by screening, a new report says.

"Obesity may actually be associated with an increased risk of developing prostate cancer, but various features among obese men make it harder to detect the cancer," Stephen Freedland from Johns Hopkins School of Medicine, Baltimore, said.

"If you do find them, it's probably the more aggressive cancers that you are finding."

In the report published in the medical journal *Urology,* Dr Freedland's team evaluated the relationship between body mass index (BMI) and prostate cancer using data from 787 consecutive men undergoing prostate biopsy at Palo Alto Veterans Affairs Medical Centre in California.

Overall, BMI did not appear to be associated with the odds of being diagnosed with prostate cancer.

However, the authors report, a higher BMI was significantly associated with an increased odds of being diagnosed with prostate cancer after factoring in prostate-specific antigen (PSA) levels, digital rectal examination findings, prostate size and race.

Men with a BMI above 35 (indicating obesity), faced a 2.4-fold higher risk of being' diagnosed with prostate cancer, compared with normal-weight men, the report indicates.

Higher prostate volume in obese men was the greatest contributor to obscuring the association between BMI and prostate cancer development, the researchers note.

After considering the contribution of PSA level, examination findings, prostate volume and race, a higher BMI was also associated with a significantly increased odds of a high Gleason score, a measure of tumour aggressiveness, the investigators report.

Specifically, the odds of having a high Gleason score were more than-doubled among men with a BMI of 30 to 35, and quadrupled among men with a BMI of 35 or higher

Dr Freedland advises doctors to be hyper-vigilant in looking for prostate cancer among obese men. He recommends obese men undergo standard PSA testing yearly.

Dr Freedland said: "Prostate size may be more important than we realise, so the biopsy protocol might need to be modified to account for that."

Whether or not more intensive screening can reduce the increased risk of prostate cancer deaths was observed among obese men before and just after measurement of PSA levels became commonplace still needs to be established, he and his colleagues conclude.*(Weekend Australian, 20/8)*

PHYSICAL ACTIVITY; EXERCISE HELPS AFTER PROSTATE TREATMENT

While physical activity preserves the sexual functioning of older men, does it also help after treatment with radiation for localized prostate cancer? A study in the journal “Urology” shows it does. The study, which involved 111 men treated with radiotherapy in Florida, found the association was especially strong among those who received external beam radiotherapy, it did not significantly improve matters among those who received brachytherapy and combination treatment. (*AFR, 11/8, p59)*

PROSTATE CANCER IS MOST COMMON IN N.S.W.

Latest figures have shown that prostate cancer is now the most common cancer in N.S.W., ahead of bowel, cancer, breast cancer and melanoma. The prominence of the disease is made more worrying by wide-spread ignorance among the most likely sufferers.

Cancer Council N.S.W. director of information Gillian Batt said the increasing rate was due to the ageing population and the fact that more men are being tested. *(Daily Telegraph, 8/9, p9)*

Testing for prostate cancer turns corner

THOUSANDS of men may be spared needless operations for prostate cancer thanks to a breakthrough by scientists.

At present, doctors lack a test that can distinguish fast-developing tumours in urgent need of attention from slow-growing ones that are not a threat. As a result, many men have operations to deal with prostate tumours that would not have killed them -and those operations can leave them impotent and incontinent.

Now; scientists from the Institute of Cancer Research in-England have-developed a method to identify "markers" that could be used to make this distinction.

"The most amazing thing about the discovery is that nobody has thought of it before," Professor Colin Cooper said. "We've been suffering a collective mental block."

Prostate tumours are identified from samples taken from the tumour using a needle. The hollow needle removes a cylinder of tissue a centimetre or two long and 1 mm in diameter. A pathologist then takes slices along the line of the biopsy tissue and examines them under a microscope. The biopsy specimens are so thin that only a few slices can be taken from each one.

"There are lots of potential markers we would like to test for," Professor Cooper said.

"One is a protein made by a gene we discovered last year, called E2F3, which is linked to aggressive tumours. There are lots of others -- but nobody's been able to test for them all."

The problem comes down to finding a way to use a small fragment of tissue for many tests.

In retrospect, Professor Cooper said, the answer was obvious. "We hit on the idea of simply turning the biopsy through 90 degrees, and taking a-series of slices across it. That way, you can get thousands of slices."

First use of the technique will be in research. The institute has collected many biopsy samples from tumours that were lethal and from apparently identical tumours that proved harmless.

The team will take 30 samples of each type and examine them for marker proteins such as E2F3. The idea is that the tests will establish a series of markers that can be used to distinguish the tigers from the pussycats.

The key markers will be used to characterise biopsies from new patients. That should enable men to be told with far greater certainty whether they are harbouring a dangerous tumour or one unlikely to do much harm.
(The Times, from The Australian 11/8/05)

QUEST FOR A CURE THAT'S NOT WORSE THAN THE CANCER

When a speaker at a recent prostate cancer conference said that "there are some patients we cannot help but there are no patients we cannot harm", the sentiment resonated with those in the room.

It is known that with prostate cancer, the cure is sometimes worse than the condition. This issue of unintended harm has been accentuated because more men are now lining up to have their prostate checked and, as a result, more cancers are being found and treated. In a push to reduce problems, there is a push towards minimally invasive treatment that causes less incidental treatment.

One established form of this treatment is brachytherapy, in which radioactive seeds are placed into the prostate. Now researchers are experimenting with seeds that both heat and deliver radiation to see if there is a synergistic rather than an additive effect.

Two other experimental forms of minimally invasive treatment are available in Australia and cryotherapy, which freezes prostate tissue and high-intensity focused ultrasound which heats and shatters the tissue with sound waves.

HIFU, to be performed for the first time in Australia next week, is delivered via a rectal probe, requiring a spinal anaesthetic and up to three days in hospital. There is no incision, no radiation and if it doesn't work the first time it can be repeated. The six-year results from using HIFU for early prostate cancer are promising, but as an emerging treatment it still needs to stand the test of time.
(Aust. Financial Review 8/9, p60)

WEIGHT GAIN MAY SPUR PROSTATE CANCER

A man's weight when he's diagnosed with prostate cancer, along with his history of weight gain, may play a key role in his prognosis, researchers report.

The study of 526 prostate cancer patients found that those who were obese (body mass index of 30 or more) when diagnosed were more likely to experience what the researchers call "biochemical failure" than patients who weren't obese.

Biochemical failure -- a rising level of prostate specific antigen (PSA) in the blood -- can indicate that cancer is advancing.

After surgery, a patient's PSA should go back to being undetectable, but if it begins to rise, that is an indicator of progression," explained researcher Sara Strom, an associate professor of epidemiology at the University of Texas M.D. Anderson Cancer Center in Houston.

The study also found that patients who were obese at age 40 had an even higher rate of biochemical failure.

Men experiencing the greatest rate of weight gain between age 25 and the time of their prostate cancer diagnosis experienced disease progression much sooner (average of 17 months) than men who gained weight more slowly (average of 39 months).

The study appears in the Oct. 1 issue of /Clinical Cancer Research/.

The findings suggest that a history of body weight could be factored in when oncologists design treatments plans for newly diagnosed prostate cancer patients, the researchers said. The results also suggest that diet and exercise may be effective in reducing the risk of prostate cancer progression.

SOURCE: M.D. Anderson Cancer Center, news release, Oct. 1, 2005 (from www.prostatecancerfoundation.org)

SUPPORT & ADVOCACY COMMITTEE CONFERENCE

The annual conference of the Support & Advocacy Committee was held in Sydney on 19th & 20th September, and was probably the best such conference held since the SAC was formed. My impression was that much was achieved in a very full programme, and that we are now getting the correct structures in place to become a much better recognized organization, with a more effective voice in the prostate cancer arena. Also, we should be able to contribute to the workings of the PCFA, with their new structure now in place.

Many matters were discussed in the conference room, in a very busy agenda. Brief notes and action points from the conference are much too voluminous to include in this newsletter, and, for the information of members, have been printed in a separate report. These notes will give members an appreciation of what is currently involved in being a member of the SAC, as well as an indication of the matters currently needing action. It is my belief that, when these matters have been completed, we will have established a good structure from which we may go forward with confidence.

The subject of effective advocacy occupied considerable conference time, and is a matter of high priority. Members will also note that the SAC has set a very ambitious budget (or should that be “wish list”?). In addition, the role of the SAC and SAC objectives were established, and we can expect to see more position statements issued by the PCFA/SAC.

Members can be assured that this was not a sightseeing trip to Sydney, and was probably the most intense conference that we have held. There was some time for socializing, though, and we attended a SAC dinner on 19th September, and a dinner on 20th Sept. which was addressed by Associate Professor Philip Stricker, who spoke on his attendance at a W.H.O. prostate cancer conference in Paris. Much of the information was quite technical, as the presentation was aimed at urologists, and the pace of the talk made it difficult for me to take effective notes.

NOVEL TEST MAY IMPROVE PROSTATE CANCER DIAGNOSIS

**By Ed Edelson*/HealthDay Reporter/*

A new test that looks at the immune system's response to prostate cancer is better at diagnosing the malignancy than the current standard, the prostate-specific antigen (PSA) test, a new study says

The test could someday be used to answer the most critical question when prostate cancer is diagnosed -- whether the tumor is so aggressive that surgery should be done, or whether watchful waiting will do, said Dr. Arul M. Chinnaiyan. Chinnaiyan, a professor of pathology at the University of Michigan Medical School, is lead author of a report on the test that appears in the Sept. 22 issue of the /New England Journal of Medicine/.

"What we are doing is taking advantage of the body's immune system, which ordinarily responds to anything foreign -- viruses, bacteria, cancer," Chinnaiyan said. "As part of that response, the immune system produces antibodies against cancer proteins."

Chinnaiyan and his colleagues took samples of DNA from prostate cancer cells and put them into a virus. The cancer DNA produces proteins that differ from the proteins normally found in the body. The researchers then put the information about 22 of those cancer proteins onto an electronic chip and tested 128 blood samples, 60 from men with prostate cancer, 68 from men without the cancer.

The test did better at detecting prostate cancer than a PSA test conducted on the same samples -- 93 percent accuracy for the new test, compared to 80 percent accuracy for the PSA test, the researchers reported.

"The main point is that this test is not only better, but is better in the area where the PSA test is weakest, at intermediate points of PSA levels," Chinniyan said.

The new study was admittedly a small one, so the researchers are moving to confirm the results in a larger number of samples. "We are now extending our work to independent samples from different institutions," Chinnaiyan said. "We are doing pilot tests of samples from around the world."

The test could become widely available "hopefully in a couple of years," he said. "We're trying to push it out of the research laboratory. We are gearing up to function as a reference laboratory. Then we could shift to a commercial provider or develop a chip based on the one we used in this test."

Follow-up studies have to develop a form of the test that could distinguish between fast- growing tumors that require aggressive therapy and those that grow so slowly they pose no death risk, Chinnaiyan said. That test would look for the proteins produced by fast-growing cancers, he said.

Dr. LaMar McGinnis, a senior medical consultant to the American Cancer Society, called the new research "interesting in potential but premature," given the small number of samples reviewed.

"We would welcome some additional help in this most common form of cancer for men," McGinnis said. "The PSA test has been of enormous value in that it enables us to detect prostate cancer at an earlier stage, when it is almost 100 percent curable. The problem is that it is overly sensitive. It does not distinguish between prostate cancers that are aggressive and less aggressive cancers."

But he cautioned that tests based on the same principle used in the new study -- looking for strange immune system antibodies -- "have not been beneficial thus far. Time will tell."

SOURCES: Arul M. Cinnaiyan, M.D., Ph.D, professor of pathology, University of Michigan Medical School, Ann Arbor; LaMar McGinnis, M.D., senior medical consultant, American Cancer Society, Atlanta; Sept. 22, 2005, /New England Journal of Medicine/ (from http://www.prostatecancerfoundation.org)

PSA TEST STILL BEST PREDICTOR OF PROSTATE CANCER RECURRENCE

FRIDAY, Sept. 23 (HealthDay News) -- Measuring the blood protein prostate specific antigen (PSA) is still the best method of predicting the likelihood of cancer recurrence after prostate cancer surgery, according to a Johns Hopkins University study appearing in the October issue of the /Journal of Urology/.

The finding counters recent claims by some experts that PSA tests may not be effective in predicting prostate cancer risk. PSA is a protein produced by the prostate gland that increases in the presence of prostate cancer.

The study of more than 2,300 men concluded that those with high PSA levels before prostate-removing surgery were much more likely to have advanced cancer, and evidence of higher-grade cancers in tissue removed during the surgery.

Increasing PSA levels were significantly associated with increased risk of cancer recurrence after prostate surgery, even in men who had lower PSA levels before surgery, the study found. Men with PSA levels of 20 nanograms per milliliter were five times more likely to develop cancer after surgery than men with PSA levels of less than 10 nanograms per milliliter.

"In our study, PSA levels measured before prostate removal surgery were significantly associated with the risk of recurrent cancer after surgery. These data support the notion that PSA remains the best available prostate cancer tumor marker. It certainly suggests that the PSA era is alive and well," study leader Dr. Stephen J. Freedland, a clincial instructor of urology, said in a prepared statement.

"From our study and others, it is clear that a single PSA value is an extremely useful measure of a patient's risk of progression after surgery. However, looking at how quickly the PSA increases over time is likely to be even more informative than a single value," Freedland said.

SOURCE: Johns Hopkins Medicine, news release, Sept. 19, 2005 (from www.prostatecancerfoundation.org)

PATIENT CAREGIVERS AT RISK FOR ANXIETY AND DEPRESSION

A recent article published in the Annals of Oncology reports that caregivers of patients diagnosed with advanced forms of cancer are likely to experience significant anxiety and, in some cases, depression, conditions that often affect their overall quality of life.

Caring for an individual diagnosed with a terminal illness can be an exhausting and overwhelming experience. In the past, only limited research has examined the mental health issues and health-related quality of life (QOL) of the primary caregivers who stay at home caring for someone diagnosed with advanced stages of cancer. In this recent study, researchers examined the prevalence of anxiety, depression and
compromised quality of life for caregivers of end-stage cancer patients.

Individuals included in the study consisted of 49 patient caregivers(PCs) of women diagnosed with breast cancer and 47 PCs of men diagnosed with prostate cancer. Quality of life scales were used to evaluate medical outcomes as well as anxiety and depression. These findings were then compared to a normalized sample of subjects of similar age who were not in a care giving role. Results of the study found that physically, the QOL of both men and women was higher than the normalized group, although mental QOL was significantly lower among the male PCs. The level of anxiety was significantly higher than normal in both men and women care givers. No significant differences in the level of depression was found in either the men or the women, although, the anxiety and depression scales did find that depression was significantly more prevalent among female caregivers when compared to the norm.

Researchers concluded that PCs of both genders are significantly more likely to experience anxiety that impacts their quality of life. Patient caregivers are encouraged to speak to their physician regarding their role as caregiver, as well as their feelings of anxiety, and depression so that support and treatment options may be discussed.

Reference: Grov E, Dahl A, Moum T, et al. Anxiety, Depression, and Quality of Life in Caregivers of Patients with Cancer in Late Palliative Phase. Annals of Oncology. 2005; 16: 1185-1191. (from http://www.pcacoalition.org)

HIGH-DOSE RADIATION CUTS RISK OF PROSTATE CANCER RECURRENCE

But it doesn't influence survival rates, a new study finds

**By Serena Gordon*/HealthDay Reporter/*

TUESDAY, Sept. 13 (HealthDay News) -- High-dose radiation can cut prostate cancer recurrence by half, but it has no impact on survival rates, a new study found.

That lack of difference in survival rates may be due to the fact that prostate cancer is a slow-growing cancer, and the new study only looked at five years of data, said the study's lead author, Dr. Anthony Zietman, a professor of radiation oncology at Massachusetts General Hospital and Harvard Medical School. It might take as long as 10 to 20 years to see a difference, he explained.

In terms of cancer recurrence, however, higher-dose radiation showed a clear benefit, Zietman said.

"Men who had high-dose radiation were much less likely to have their cancer return than those with conventional radiation," he said. "And, because the technology has gotten very accurate, there was very little price to pay for the increased [radiation] dose, in terms of side effects," including impotence, he added.

The findings appear in the Sept. 14 issue of the /Journal of the American Medical Association/.

Almost two million American men are prostate cancer survivors, and more than 232,000 are diagnosed with the disease each year, according to the American Cancer Society. While as many as one in six men develops the disease over a lifetime, only one in 34 dies from it, the society said.

More than 26,000 American men choose radiation to treat their prostate cancer, according to background information in the article. Recurrence of prostate cancer, despite conventional radiation therapy, is common.

Zietman said during the past 10 years, radiation technology as improved dramatically, and doctors can now deliver higher doses of radiation more accurately than they could in the past.

To see if these higher doses of radiation could help prevent some cases of recurrence, Zietman and his colleagues compared 197 men who received conventional radiation to 195 who received high-dose radiation to treat early prostate cancer.

The average age of the men was 67 for the conventional group and 66 for the high-dose group. Most of the study volunteers were white.

Just over 61 percent of men on conventional radiation remained cancer-free after five years, while 80.4 percent of those treated with high-dose radiation had no cancer recurrence, the researchers found.

According to Zietman, the finding suggests that "men need to be asking radiation oncologists if they are just having conventional radiation, or if they're going to take advantage of the technology to deliver higher doses."

Dr. Theodore DeWeese, co-author of an editorial in the same issue of the journal and chairman of the department of radiation oncology and molecular radiation sciences at Johns Hopkins University School of Medicine, pointed out that not all hospitals can provide high-dose radiation yet.

He said the benefits of high-dose radiation generally outweigh the potential risks, "with the proviso that the physicians and the institution are capable of delivering these high doses safely." Right now, he said, that means getting treatment at larger medical centers. But, he added, smaller, community hospitals will likely have the technology soon as well.

"If you're otherwise healthy, with a life expectancy of at least 10 years, aggressive management of prostate cancer is likely to benefit you, and to reduce recurrence," DeWeese said.

Men need to discuss all the treatment options with their physician, and then decide which one has the most acceptable side-effect profile, he said.

SOURCES: Anthony Zietman, M.D., professor of radiation oncology, Massachusetts General Hospital and Harvard Medical School, Boston; Theodore DeWeese, M.D., professor and chairman, department of radiation oncology and molecular radiation sciences, Johns Hopkins University School of Medicine, Baltimore; Sept. 14, 2005, /Journal of the American Medical Association/(from http://www.prostatecancerfoundation.org)

PROSTATE CANCER HORMONE THERAPY MAY AFFECT COGNITION

Results of a pilot study suggest that neoadjuvant hormone therapy for early prostate cancer has a modest short-term adverse impact on cognitive function, UK researchers report in the July issue of BJU International.

"Clinicians need to be aware," Dr. Valerie Jenkins told Reuters Health, that luteinizing-hormone releasing hormone (LHRH) agonist therapy "may cause subtle changes in cognition in this group of patients. These patients only received 3 months therapy whereas many patients receive longer term treatments," she added.

Dr. Jenkins of the University of Sussex, Brighton and colleagues monitored the short-term effect of LHRH agonist therapy on patients' memory, concentration and spatial skills.

Thirty-two patients with localized prostate cancer had cognitive assessments before the start of hormone therapy, at 3 months or on completing drug therapy but before radiotherapy, and 9 months later. Eighteen men with no prostate cancer were also given these cognitive tests.

"The results showed that for some men, performance was worse following treatment when testosterone levels were low, particularly their spatial skills," Dr. Jenkins said. "The effects were subtle rather than clinical, although a quarter of the men one year later still complained that their memory had deteriorated."

Specifically, at 3 months, 15 (47%) of hormone-treated men versus 3(17%) of controls showed significant cognitive decline on at least one cognitive task. The odds ratio of cognitive decline with hormone therapy was 4.4.

At 9 months, 11 (34%) of hormone-treated men and 5 (28%) of control subjects displayed significant cognitive decline, for an odds ratio of 1.37.

Given these findings and the "increasing use of LHRH therapy," the researchers call for a larger prospective study of the possible side-effects of the treatment.
SOURCE; BJU Int 2005;96:48-53. (from http://www.pcacoalition.org)

HORMONE THERAPY PATIENTS WANT MORE LIFESTYLE INFO

Nearly nine out of 10 healthy men say maintaining their lifestyle is the main priority if they had to receive a hormonal treatment for locally advanced prostate cancer, according to a new study.

1 In reality, nearly half of men feel that they are not asked about their lifestyle preferences when discussing treatment options and their effect on quality of life, as results from a new patient survey show.

2 In contrast, more than three quarters of women with breast cancer are likely to be asked about their lifestyle preferences when discussing treatment options.

The study involved 180 healthy men, aged 50 years and over, who were given scenarios describing the details of the two types of hormonal therapies used in locally advanced

prostate cancer - either a luteinising hormone releasing analogue (LHRHa), or a non-steroidal anti-androgen (NSAA), such as bicalutamide 150mg - together with a discussion on their side effects. They were then interviewed and asked which type of therapy they would prefer if they were diagnosed with locally advanced prostate cancer.

Professor Lesley Fallowfield, one of the study researchers and Director of Cancer Research UK's Psychosocial Oncology Group, Brighton and Sussex Medical School, says: "These results suggest that men with locally advanced prostate cancer should be offered not just a choice of treatment but an explanation of how the treatments are given and the impact that their side effects may have on men's lifestyles."

Most men would prefer a hormonal therapy that allows them to maintain their lifestyle by avoiding undesirable side effects, such as reduced physical strength and increased risk of bone fractures. Nearly nine out of 10 men say they would prefer NSAA therapy (compared with less than one in 10 choosing an LHRHa), because of a better side effect profile (three quarters of respondents).

Patients with locally advanced prostate cancer have a significant risk of their disease progressing, seriously impacting quality of life. Therefore therapies that improve progression-free survival whilst allowing patients to maintain a normal lifestyle are vital in managing the disease. It has been shown that when patients' are given the advantages and disadvantages of alternative treatments, they are willing to contemplate trading life expectancy to be relieved of the burden of side effects, such as limitations in physical energy.3

In addition, results from the patient survey show the need for physicians to involve men more when deciding on the choice of treatment. The comparative survey of prostate (n=87) and breast (n=104) cancer patients currently receiving hormonal therapy aimed to look at the differences in behavioural and attitudinal approaches that men and women have towards their disease and its treatment. Findings show that just over half of men with prostate cancer are likely to be asked about their lifestyle preferences by their physician in stark contrast to four out of five women with breast cancer when treatment options are being discussed.2

"Although men are traditionally less likely to talk about illness, especially their own," says Professor John Masters, Executive Director, the Prostate Cancer Research Centre, University College, London. "These findings show us that not enough is being done to address men's concerns over side effects of prostate cancer therapies and their impact on lifestyle. Patients need to be involved in the treatment decision process to ensure that they receive the best treatment choice in terms
of lifestyle and quality of life."

Even though nearly two thirds of men with prostate cancer experience side effects with hormonal therapies, less than one in five is willing to discuss the possibility of changing treatment to reduce side effects, compared with more than a third of women with breast cancer.2

Mr Geoffrey Mitchell, a 59-year-old grandfather of three, says that men need to be bolder when it comes to challenging their physicians about treatments and actively seeking more information about their illness. "When I was first diagnosed with prostate cancer, I felt it was very much a case of 'doctor knows best'. Also, the worry of first being told you have cancer meant I couldn't really think straight at the time. Fortunately, my doctor discussed all the options in detail and we both
agreed the most suitable drug for me. The last thing I wanted was to have to give up my active lifestyle and work. We both agreed that I needed a treatment which would mean I could still carry on at work and be there for my children and grandchildren."

The findings from both the preference study and patient survey reinforce the need to offer patients with locally advanced prostate cancer a choice of treatment options, and for physicians to discuss these not only in terms of achieving an effective outcome but also how their side effects will impact on men's lifestyles and physical activities.

Each year around 30,000 men in the UK alone are diagnosed with prostate cancer, which has overtaken lung cancer to become the most common cancer for men in the UK. Prostate cancer is the second biggest cause of death from cancer in men in the UK with around 10,000 deaths each year and more than 80 per cent of cases are diagnosed in men over 60.4

When the prostate cancer has spread into the capsule of the prostate or through the prostate into the surrounding tissue, it is described as being 'locally advanced'

The preference study involved 180 men aged over 50. Research was conducted by the team at Cancer Research Psychosocial Oncology Group, Brighton and Sussex Medical School, headed by Lesley Fallowfield. The authors were in receipt of an unrestricted educational grant from AstraZeneca Oncology

Bicalutamide 150mg is a non-steroidal anti-androgen, indicated for locally advanced prostate cancer as immediate therapy either alone or as adjuvant to treatment by radical prostatectomy or radiotherapy. Bicalutamide 150mg monotherapy offers an alternative treatment, when surgical castration or other medical intervention is not considered appropriate

The oncology survey was supported by an unrestricted educational grant from AstraZeneca Oncology UK

The Prostate Cancer Research Centre is an organization which researches into the treatment and cure of prostate cancer and provides patients with information on treatments available

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MANY CANCER SURVIVORS MAKE HEALTHY CHANGES

Male, Older, and Less-Educated Patients Less Likely to Change Lifestyle After Cancer

By Jennifer Warner | WebMD Medical News | 07.25.2005

Cancer survivors often make healthy lifestyle changes after their cancer treatment, but a new study suggests many may not go far enough in adopting healthy habits.

Researchers found up to 60% of cancer survivors follow a healthier diet after diagnosis and treatment, yet less than half are eating the recommended five or more servings of fruits and vegetables per day.

The study also showed that about 70% of breast and prostate cancer survivors remain overweight or obese.

There are almost 10 million cancer survivors in the U.S., and that number is expected to grow thanks to improvements in cancer diagnosis and treatment. For example, only about

50% of people diagnosed with cancer in 1971 were expected to be alive after five years, compared with64% of those diagnosed with cancer today.

Researchers say adopting healthy lifestyle changes is especially important for cancer survivors because they are at increased risk for second cancers as well as other diseases, such as osteoporosis, obesity, heart disease, and diabetes.

A Healthier Life After Cancer?
In their study, researchers reviewed 100 studies on cancer survivors to examine the impact of cancer diagnosis and treatment on lifestyle and behavior changes. The results appear in the Aug. 20 issue of the Journal of Clinical Oncology.

Overall, they found that many cancer survivors adopt healthier behaviors, such as:
30%-60% eat a healthier diet. 46%-96% of smokers with tobacco-related cancers (lung, head, or neck) quit smoking. 47%-59% of those with head and neck cancers linked to alcohol use abstain from alcohol. 70% engage in regular physical activity of 30 minutes of exercise a day at least five days a week.

However, the study showed that cancer survivors who were male, less educated, over age 65, or who live in urban areas were less likely to start or maintain healthy lifestyle changes.

The study also showed that only 25%-42% of cancer survivors eat adequate amounts of fruits and vegetables.

Researchers also found that only 20% of oncologists (cancer doctors) provided guidance to their patients on adopting a healthier lifestyle due to time constraints, treatment or health concerns, and uncertainty about how the message would be received or affect their patient's health.

'Teachable Moment' for Patient and Doctor
In an editorial that accompanies the study, Patricia A. Ganz, MD, of the Jonsson Comprehensive Cancer Center at the University of California, Los Angeles, says the diagnosis of cancer and transition to cancer survivor are "teachable moments" for oncologists to encourage their patients to adopt a healthier lifestyle.

"Cancer survivors are looking for important ways to prevent a recurrence of their cancer, and to enhance the quality and length of their lives," writes Ganz.

But Ganz says it's also a teachable moment for oncologists to focus more attention on this new posttreatment phase of cancer care.

SOURCES: Demark-Wahnefried, W. Journal of Clinical Oncology, Aug. 20, 2005; vol 23. News release, America Society of Clinical Oncology. (from http://www.pcacoalition.org)

PROBLEMS WITH PSA TESTS

Many men are having the PSA blood test in the belief it's screening them for prostate cancer. Sobering findings from probably the best study to date further undermine the value of PSA testing, showing there's no such thing as a normal PSA value.

It was a seven year follow up of healthy men aged 55 or over who had regular PSA tests and a biopsy at the end (or should I say in their end). The biopsy meant that the PSA levels could be compared to whether there really was cancer.

They found that a PSA of four (what some would say is a normal value) misses 80 per cent of prostate cancers and falsely diagnoses six per cent. A PSA of 1.1 only misses 10 per cent of cancers but at the cost of falsely diagnosing 61 per cent of men, and risking over-detecting insignificant cancer cells. They did find that PSA testing was better at detecting nastier tumours - but these are often the ones unfortunately where there is no curative treatment.

It means there is no PSA level at which its accuracy is acceptable and points to how men need a better screening test for prostate cancer which identifies tumours which matter.

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COMBINATION HORMONE/VACCINE THERAPY FOR PROSTATE CANCER MAY BENEFIT PATIENTS WHOSE DISEASE RETURNS

A new study finds that a cancer vaccine combined with hormone-deprivation therapy can help patients with recurrence of prostate cancer. The results of this clinical trial, led by scientists at the National Cancer Institute (NCI), part of the National Institutes of Health, appear in the August 2005 issue of the Journal of Urology.*

This phase II trial (a trial that usually tests the effectiveness of a drug) was designed to treat patients with nonmetastatic prostate cancer who were experiencing rising levels of prostate-specific antigen (PSA), which can indicate recurrence of the disease. Prostate cancer often progresses several years after treatment with hormone-deprivation therapy.

This is the first study to combine antiandrogen therapy (reducing the amount of androgens, which are male sex hormones) and a cancer vaccine for treating prostate cancer, and also the first randomized clinical trial in this population of prostate cancer patients. Cancer vaccines are designed either to treat existing cancers or to prevent the development of cancer. The experimental vaccine used in this study was designed to strengthen the body's natural defenses against prostate cancer.

“The question is, what do you do for someone who has already failed standard therapy with hormones?” said Philip M. Arlen, M.D., of NCI's Laboratory of Tumor Immunology and Biology. “This study was designed to answer that question and examined a population of patients whose cancers were resistant to hormone therapy, had no metastatic disease that was observable by computed tomography (CT or CAT) scan, but had a rising PSA score, an indicator of recurrence.”

NCI scientists randomly assigned 42 prostate cancer patients to receive either vaccine or second-line antiandrogen treatment, which consisted of the hormone nilutamide. Nilutamide works by blocking the effects of excess testosterone, a hormone produced by the body that can promote the growth of cancer cells. After the first six months of treatment, participants in both arms of the study, who had rising PSA levels but no evidence of metastatic disease, could choose to receive the other treatment in combination with their first study treatment.

There were no serious side effects from the vaccine, but some of the participants receiving nilutamide experienced severe adverse reactions involving lung toxicities, an uncommon side effect sometimes associated with the drug. Median time before the treatment started to fail was 9.9 months for individuals who received vaccine alone compared to 7.6 months for patients on nilutamide alone, a difference not considered statistically significant. However, 12 of the 21 vaccine recipients had nilutamide added to their treatment regimens after six months. The patients in that group experienced an additional median time of 13.9 months until treatment failure, for a total of 25.9 months from the beginning of their treatments.

“The positive effects of combining antiandrogen therapy to vaccine may be because the vaccine acts to prime the immune system, and when you add the hormone treatment, it allowed the vaccine to work even better,” explained Arlen. “Our study indicates there may well be a synergy between immunotherapy with vaccines and hormone deprivation.”

The rationale for testing a vaccine/hormone therapy combination came from clinical observations showing that hormone therapy increases the number of immune cells reaching the prostate gland, thereby allowing vaccines to work more effectively.

Arlen and his NCI colleagues are planning a follow-up study using the vaccine and antiandrogen at the same time, instead of sequentially, in similar patients. They will be testing a more potent, newer prostate cancer vaccine in the next study. The NCI scientists will also use a different hormone treatment called flutamide, which has fewer and less serious side effects than nilutamide.

“Our goal moving forward is to introduce the vaccines into earlier treatment stages,” Arlen said. “We have shown that this therapy is safe and well-tolerated. Next we want to keep this population of patients either stable or improving, and also prevent metastatic disease. Achieving that would be a tremendous benefit in terms of their quality of life.”

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ANCIENT FRUIT FINDING FAVOUR AS MODERN REMEDY

by Elena Conis

In Greek mythology, the pomegranate symbolized death and fertility; in ancient Chinese culture, it was a symbol of immortality. One of the earliest cultivated fruits, the pomegranate is also called a gift from God in the Bible and the Koran. The pomegranate tree's fruits, seeds, bark and flowers have been used medicinally for thousands of years in its native Middle East, Asia and Latin America. Today, the pomegranate, whose scientific name, Punica granatum, is from the Latin for "seeded apple", is attracting attention as a powerhouse of antioxidants.

Uses: Historically, parts of the pomegranate tree have been used to treat illnesses including intestinal parasites and respiratory infections. More recently, pomegranate juice has been touted as a protective agent against heart disease, stroke and cancer.

Dose: Usually, 8 to 16 ounces of juice daily.

Precautions: Pomegranate juice appears safe, though few human studies have investigated long-term or high-dose safety or its use in children.

Research: Studies have scrutinized pomegranate's various health effects, but the bulk of these have been confined to the lab. In lab and animal experiments, the juice shows promise against skin, breast and prostate cancer; menopausal symptoms; brain damage in newborns; ulcers; HIV; and the herpes virus. Preliminary animal research published last month in the Journal of Urology suggests the juice may prove to be a treatment for erectile dysfunction. However, there have been few human clinical trials. In a clinical trial in Iran, the juice lowered cholesterol levels in 22 patients with diabetes. Two small clinical trials in Israel showed that daily consumption of pomegranate juice can reduce plaque buildup in arteries, a condition that can lead to heart attack or stroke. More human trials are needed to confirm the fruit's purported health-promoting powers.

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PSA CHANGES OVER TIME PREDICT PROSTATE CANCER RISK

by Ed Edelson

HealthDayNews) -- The answer to the biggest question in prostate cancer therapy -- which cancers need aggressive treatment and which are best left to "watchful waiting" -- may lie in the results of the prostate-specific antigen (PSA) test, two studies indicate.

But current practice, which relies on the PSA level gleaned from a single test, may need some tinkering, said Dr. Stephen J. Freedland, leader of one of the studies.

Instead, increases in PSA occurring over a series of tests appear crucial in gauging cancer risk, he explained.

"A single reading is like looking at one snapshot of a race," said Freedland, a clinical instructor in urology at the Johns Hopkins Hospital in Baltimore. "Watching the PSA change over time gives you a much better picture."

The rate at which PSA levels doubled over time was a critical factor for predicting death in a group of 379 men who underwent surgery for prostate cancer, concludes a

report by Freedland's group published in the July 27 issue of the /Journal of the American Medical Association/.

"These preliminary findings may serve as useful guides to patients and their physicians to identify patients at high risk for prostate cancer-specific mortality ...[and] to enroll them in early aggressive treatment trials," they wrote.

A second paper in the same journal found similar results for a much more common scenario -- men treated with radiation after being diagnosed with prostate cancer.

The crucial factor predicting death in the 358 men in that trial was a two-point rise in PSA readings. Of the 30 deaths in the study, 28 occurred in men whose PSA rose by more than two points in the year before diagnosis.

"The PSA test has come under a lot of scrutiny because people have been looking at levels, rather than changes in levels," said lead researcher Dr. Anthony D'Amico, chief of radiation oncology at Brigham and Women's Hospital in Boston. "This change in PSA of two points heralds the fact that the disease is beyond the prostate and needs more than prostate treatment."

For men, the reports have implications that start with their annual physical exam, D'Amico said. A PSA test should be part of that exam, and an increase of two points from the original level, no matter how high or low, indicates that a biopsy should be done to detect cancer, he said.

"You need to trace your PSA, not just where it is at, but where it is going," D'Amico said.

Once cancer is detected, aggressive treatment may be advisable for those men who experienced a two-point PSA increase before diagnosis, he said. Specifically, hormonal therapy should be added to other standard treatments, such as radiation therapy. In a previous study, hormonal therapy halved the death rate over seven years, D'Amico said.

The situation is different for men whose cancer recurs after surgery Freedland noted. "Step one is to guess who to treat, and the PSA test can show that," he said. "Step two is how to treat them, and we're not there yet."

But for men newly diagnosed with prostate cancer, "the standard of care is going to be different because of PSA reading," D'Amico said. "Even though the level is low, a two-point increase indicates that more than radiation is needed to affect a cure."

PRETREATMENT PSA VELOCITY AND RISK OF DEATH FROM PROSTATE CANCER FOLLOWING EXTERNAL BEAM RADIATION THERAPY

Anthony V. D'Amico, MD, PhD; Andrew A. Renshaw, MD; Brenda Sussman, RN, OCN; Ming-Hui Chen, PhD/JAMA./ 2005;294:440-447.

***Context *** Men with localized prostate cancer and a preoperative prostate-specific antigen (PSA) velocity greater than 2.0 ng/mL per year experience a 10-fold increase in prostate cancer specific mortality despite surgery.

***Objective *** To assess whether a greater than 2.0-ng/mL increase in PSA level during the year prior to diagnosis was significantly associated with prostate cancer-specific mortality following radiation therapy (RT).

***Design, Setting, and Patients *** Between January 1, 1989, and December1, 2002, 358 men treated with RT for localized prostate cancer formed the study cohort (median age at treatment, 71.2 [range, 43.2-83.5] years). A Cox regression multivariable analysis was used to evaluate whether a PSA velocity greater than 2.0 ng/mL per year was significantly associated with prostate cancer specific mortality and all-cause mortality after controlling for prognostic factors available at diagnosis.

***Main Outcome Measure *** Time to prostate cancer specific mortality for the 125 men with low-risk prostate cancer (clinical tumor category T1c or T2a and PSA level <10.0 ng/mL and Gleason score ?6) and the 233 men with higher-risk disease, stratified by the PSA velocity.

***Results *** A PSA velocity greater than 2.0 ng/mL per year was significantly associated with a shorter time to prostate cancer specific mortality (adjusted hazard ratio [HR], 12.0; 95% confidence interval [CI], 3.0-54.0; /P/ = .001) and all-cause mortality (adjusted HR, 2.1; 95% CI, 1.3-3.6; /P/ = .005) when compared with men whose PSA velocity was 2.0 ng/mL per year or less. Men presenting with low-risk disease and a PSA velocity greater than 2.0 ng/mL per year had a 7-year estimate of prostate cancer specific mortality of 19% (95% CI, 2%-39%) compared with 0% for men whose PSA velocity was 2.0 ng/mL per year or less. The corresponding values for men with higher-risk disease were 24% (95% CI, 12%-37%) and 4% (95% CI, 0%-11%), respectively.

***Conclusions *** A greater than 2.0-ng/mL increase in PSA level during the year prior to diagnosis is associated with a significantly higher risk of death due to prostate cancer following RT despite having low-risk disease. Such men who are planning to undergo RT and are in good health could be considered for RT combined with androgen suppression therapy because this approach improves survival in men with higher-risk disease.

Author Affiliations: *Departments of Radiation Oncology (Dr D'Amico and Ms Sussman) and Pathology (Dr Renshaw), Brigham and Women's Hospital and Dana Farber Cancer Institute, Boston, Mass; and Department of Statistics, University of Connecticut, Storrs (Dr Chen). (from http://www.pcacoalition.org)*

M.I.T. ENGINEERS AN ANTI-CANCER SMART BOMB

by Elizabeth Thomson | Massachusetts Institute of Technology

CAMBRIDGE, MA -- Imagine a cancer drug that can burrow into a tumor, seal the exits and detonate a lethal dose of anti-cancer toxins, all while leaving healthy cells unscathed. MIT researchers have designed a nanoparticle to do just that.

The dual-chamber, double-acting, drug-packing "nanocell" proved effective and safe, with prolonged survival, against two distinct forms of cancers--melanoma and Lewis lung cancer--in mice.

The work will be reported in the July 28 issue of Nature, with an accompanying commentary.

"We brought together three elements: cancer biology, pharmacology and engineering," said Ram Sasisekharan, a professor in MIT's Biological Engineering Division and leader of the research team.

"The fundamental challenges in cancer chemotherapy are its toxicity to healthy cells and drug resistance by cancer cells," Sasisekharan said. "So cancer researchers were excited about anti-angiogenesis," the theory that cutting off the blood supply can starve tumors to death. That strategy can backfire, however, because it also starves tumor cells of oxygen, prompting them to create new blood vessels and instigate metastasis and other self-survival activities.

The next obvious solution would be combining chemotherapy and anti-angiogenesis--dropping the bombs while cutting the supply lines. But combination therapy confronted an inherent engineering problem. "You can't deliver chemotherapy to tumors if you have destroyed the vessels that take it there," Sasisekharan said. Also, the two drugs behave differently and are delivered on different schedules: anti-angiogenics over a prolonged period and chemotherapy in cycles.

"We designed the nanocell keeping these practical problems in mind," he said. Using ready-made drugs and materials, "we created a balloon within a balloon, resembling an actual cell," explains Shiladitya Sengupta, a postdoctoral associate in Sasisekharan's laboratory.

In addition to Sasisekharan and Sengupta, the co-authors are David Eavarone, Ishan Capila and Ganlin Zhao of MIT's Biological Engineering Division; Nicki Watson of the Whitehead Institute for Biomedical Research; and Tanyel Kiziltepe of MIT's Department of Chemistry.

The team loaded the outer membrane of the nanocell with an anti-angiogenic drug and the inner balloon with chemotherapy agents. A"stealth" surface chemistry allows the nanocells to evade the immune system, while their size (200 nanometers) makes them preferentially taken into the tumor. They are small enough to pass through tumor vessels, but too large for the pores of normal vessels.

Once the nanocell is inside the tumor, its outer membrane disintegrates, rapidly deploying the anti-angiogenic drug. The blood vessels feeding the tumor then collapse, trapping the loaded nanoparticle in the tumor, where it slowly releases the chemotherapy.

The team tested this model in mice. The double-loaded nanocell shrank the tumor, stopped angiogenesis and avoided systemic toxicity much better than other treatment and delivery variations.

But it is patient survival and quality of life that really inspire this research, Sasisekharan said. Eighty percent of the nanocell mice survived beyond 65 days, while mice treated with the best current therapy survived 30 days. Untreated animals died at 20.

"It's an elegant technique for attacking the two compartments of a tumor, its vascular system and the cancer cells," said Judah Folkman of Children's Hospital Boston. "This is a very neat approach to drug delivery," said MIT Institute Professor Robert Langer.

The nanocell worked better against melanoma than lung cancer, indicating the need to tweak the design for different cancers. "This model enables us to rationally and systematically evaluate drug combinations and loading mechanisms," says Sasisekharan. "It's not going to stop here. We want to build on this concept."
(from http://www.pcacoalition.org)

And now for some nonsense ……

HOW SMART IS YOUR RIGHT FOOT?

This will boggle your mind. And you will keep trying at least 50 more times to see if you can outsmart your foot, but you can't.

1. While sitting at your desk, lift your right foot off the floor and make clockwise circles.
2. Now, while doing this, draw the number "6" in the air with your right hand.

Your foot will change direction. And there's nothing you can do about it!

Newsletter compiled by
Trevor Hunt