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The HEALTHY MALE

Newsletter of Andrology Australia - Australian Centre of Excellence in Male Reproductive Health

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Andrology

An-drol'-uh-jee

The study of the functions and diseases peculiar to males, especially of the reproductive organs

FROM THE DIRECTOR

Prostate disease is one of the most widespread, serious men's health issues in Australia.

Over the last decade many resources have been given to expanding education and research programs.

Andrology Australia has identified prostate disease as one of its key target areas however it is conscious of not duplicating quality programs that are already in existence. There are never enough resources to comprehensively and rapidly combat a problem that effects one in four men over the age of 65 and kills over 2000 Australian men each year. Therefore it is vital that resources are used wisely. Andrology Australia seeks to supplement, augment and advance prostate education and research.

In this edition of **The Healthy Male** we have addressed only one aspect of prostate disease: prostate cancer. This is not to deny the significance of benign prostate enlargement (BPH) which will be covered in future editions.

To obtain information now on BPH please visit our website: **www.andrologyaustralia.org**

David de Kretser

The PSA Testing DEBATE

PSA screening, particularly when combined with rectal examination, is considered to be a valid means of diagnosing prostate cancer. However test results can be unreliable and it is yet to be proven absolutely that PSA based prostate cancer screening actually helps reduce mortality rates.

Therefore it is the opinion of most Cancer Societies around the world and the Urological Society of Australasia that mass population screening cannot be justified.

However it is recommended that men in susceptible age groups should be made aware of the test and given sufficient information about its benefits and risks, so that an informed decision whether to test or not to test can be made.

There is now ample evidence from databases in the USA to suggest that PSA testing has increased detection of localized cancers which are pathologically significant. There also appears to be a decreased risk of metastatic cancer or cancer spread in patients whose cancer has been detected through PSA screening.

Preliminary research also suggests that death rates from prostate cancer have dropped in geographic areas that have adopted a mass screening policy.

A recent study from the Federal State of Tyrol in Austria which introduced mass screening as compared to the rest of Austria which did not, noted a 45% difference in prostate cancer mortality suggesting a benefit from PSA screening and early detection and treatment (*Urology 2001. 58: 417*).

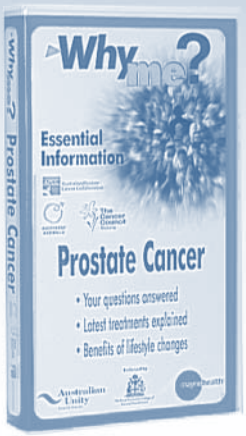
Mortality worldwide from prostate cancer has fallen by 20% in recent years and whilst other explanations are possible, such as the earlier use of hormone therapy, it is certainly plausible that the drop may be due to the early detection and treatment of prostate cancer.

Furthermore a review of cut off levels for PSA which are currently set at 4ng/ml is recommended. It is clear that significant prostate cancer exists with PSA levels between 2.5ng/ml and 4ng/ml. As such, it would seem that refining PSA levels and defining clearer testing intervals would be appropriate as future research needs.

Associate Professor Mark Frydenberg
Head of Urology, Monash Medical Centre,
Urological Surgeon & Uro-oncologist

>> EDUCATION UPDATE

PROSTATE CANCER VIDEOS



Why me?

Andrology Australia has supported the production of a new video to answer common questions about prostate cancer and provide up-to-date advice on treatment options.

Called **Why Me? - Prostate Cancer**, the video contains extensive medical information and advice about prostate cancer from the point of diagnosis through to the very latest treatments and possible lifestyle changes.

In simple, non-technical language the common slowly growing nature of prostate cancer is explained, highlighting to men and their families that there is often time to weigh up the treatment options. If the cancer is detected early, it can frequently be cured.

Medical experts interviewed on the tape include leading Australian urologist, Associate Professor Mark Frydenberg.

The video also features case study interviews with men who have undergone surgery and radiotherapy treatments. These stories emphasise how a positive mental attitude, and the support of family and peers will help a patient to cope both emotionally and physically with treatment.

Andrology Australia Director, Professor David de Kretser, said that the video was a credible and factual educational resource which would help further awareness of prostate cancer in the general community.

"Increased awareness and knowledge of prostate cancer is essential as a means of encouraging more testing and ultimately saving lives," he said.

Why Me? - Prostate Cancer has been produced and distributed by media company Business Essentials. The Cancer Council Victoria and the Australian Prostate Cancer Collaboration also assisted with the production. The program is presented by medical educator, Dr Paul Nisselle and also contains healthy eating tips by chef Sherry Clewlow and exercise advice from Sue Stanley.

The video costs $27.45 plus $5.50 P&H including GST and is available by calling Business Essentials on 1800 039 098 or by visiting www.whyme.com.au

Why Me? - Prostate Cancer is part of a 13 topic health series produced by Business Essentials with the endorsement of the Royal Australian College of General Practitioners (RACGP). The series received sponsorship support from Mayne Health and Australian Unity.

The other topics covered in the **Why Me?** series are: Arthritis, Infertility, Menopause, Stress/Anxiety/Depression, Multiple Sclerosis, Blood Pressure, Weight Management, Heart Disease, Asthma, Diabetes, Cancer and Osteoporosis.

As a result of a recent anonymous donation to Andrology Australia, complimentary copies of the **Why Me? - Prostate Cancer** video have been provided to various State and Territory Cancer councils.

>> RESEARCH ROUNDUP

Australian Prostate Cancer Bio-Resource

Early detection methods and a guide to the rate of growth of prostate cancer to assist determine treatment decisions are the goals of many prostate cancer researchers around Australia.

Tissue and clinical data collection is essential to finding new markers of diagnosis and progression for prostate cancer.

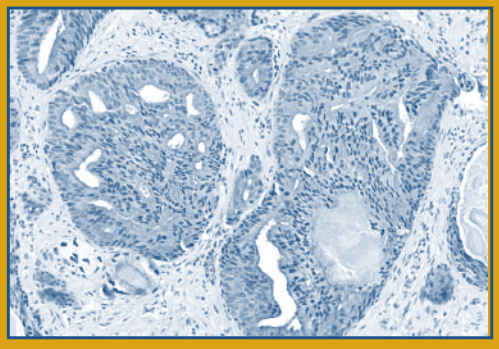
Andrology Australia has committed research infrastructure support for the development of a national prostate tumour tissue bank in association with the Australian Prostate Cancer Collaboration (APCC) and other agencies.

By providing this comprehensive tissue resource and associated clinical database, it is envisaged that all clinicians and scientists involved in prostate cancer research in Australia will have access to quality material and data to enhance research activity in prostate cancer.

The resource will have a web-based "virtual face" that can be accessed nationally with the participation of multiple "real" tumour bank nodes Australia-wide.

Such databases have been recognized internationally as providing a valuable resource to enable increased, high quality collaboration between basic and clinical researchers.

The bio-resource is also supported by the Commonwealth Bank and the Prostate Cancer Foundation of Australia.



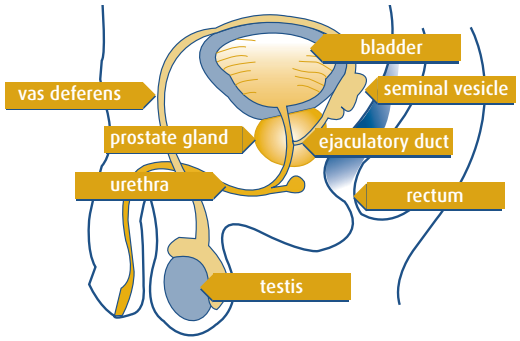
Human biopsy material showing prostate cancer cells. Courtesy Hong Wang, Centre for Urological Research, Monash Institute of Reproduction & Development.

AUTHOR: ASSOCIATE PROFESSOR MARK FRYDENBERG

Focus on PROSTATE CANCER

What is the prostate?

The prostate gland is about the size of a walnut and is shaped like a doughnut. It sits just underneath the bladder and surrounds the upper part of the urethra.



What is prostate disease?

It is important to recognize that not all prostate disease is cancer. Prostate disease is a term used to describe any medical problems involving the prostate gland. Benign prostatic hyperplasia (BPH) is the most common form of prostate disease. It is a non-cancerous enlargement of the prostate gland. BPH will be reviewed in more detail in a later edition of The Healthy Male.

What is prostate cancer?

Prostate cancer occurs mainly in men over the age of 50. Excluding some forms of skin cancer, prostate cancer is the most common type of cancer in men in Australia.

Prostate cancer is a condition where cells within the prostate grow and divide abnormally and a tumour grows. Unlike most other cancers in the body, small areas of cancer cells in the prostate are common in many men.

For many men, these cancer cells may be very slow growing and not present any problems or symptoms and may not be life-threatening. It is estimated that about one quarter of men over the age of 50 may have a small area of cancer cells within the prostate. This figure can rise to over 40% in men aged 60 years.

In other cases, the cancer cells can grow more rapidly and may spread to other parts of the body. It is not known why some cancers grow at different rates and which cancers may spread to other parts of the body.

What causes prostate cancer?

The causes of prostate cancer are not known. However there are certain risk factors that have been associated with prostate cancer. These include:

- A family history of prostate cancer
- Age - risk increases exponentially after 60 years of age.
- Race - eg. Afro-Caribbean men are more at risk of having prostate cancer than Asian men.
- Diets high in animal fat and protein MAY be associated with higher risk of developing prostate cancer.
- Studies linking vasectomy with increased risk of prostate cancer have not been substantiated.

How is prostate cancer diagnosed?

The presence of prostate cancer is normally suspected through:

- Digital rectal examination where the doctor places a finger inside the rectum or back passage to check for changes to the surface of the prostate.
- A PSA test to measure levels of prostate specific antigens in the blood. If the levels of PSA are high and a rectal examination is abnormal, there is approximately a 60% chance of prostate cancer being found.

Why is biopsy necessary to confirm diagnosis?

A transrectal ultrasound (TRUS) guided biopsy of the prostate gland is the only way prostate cancer can be diagnosed with certainty. To perform the biopsy an ultrasound probe is placed in the rectum and "sound" waves are used to obtain an image of the prostate. A TRUS biopsy collects tissue from several areas of the prostate gland for pathological testing.

What is a Gleason score?

From the biopsy sample, the cancer tissue is graded under the microscope to give some indication of its characteristics (if its an aggressive or slow growing cancer) and what type of treatment is more appropriate. This grading system is called a Gleason score.

By grading the appearance of the two most common cell types and adding the scores together, a total rating from 2 to 10 is given.

Fast-growing cancers which are more likely to affect a man's health and lifespan are called 'high-grade cancers' with a Gleason score of 7 to 10 and usually need to be treated more radically.

Why are bone scans done?

A bone scan is often done to see whether the cancer has spread to bones. A bone scan is also useful as a baseline for future follow-up and monitoring of the disease.

What determines treatment recommendations?

The type of treatment advised will depend on a number of factors. The doctor will consider:

- The stage of the cancer - localised in the prostate gland or spread to other parts of the body
- The Gleason score - high (more aggressive) or low biopsy grading
- The level of PSA in the blood stream
- The man's age
- The man's general medical health
- The side effects of treatment
- Patient preference

Focus on PROSTATE CANCER TREATMENT

What are the treatment options for localised cancer?

If the cancer is localised in the prostate gland, the three forms of treatment available are:

- Surgical (radical prostatectomy)
- Radiation therapy
- Observation only (watchful waiting)

What is a Radical Prostatectomy?

Surgery for prostate cancer or radical prostatectomy involves the removal of the whole of the prostate gland through a cut in the abdomen. The prostate and the urethra within the gland are removed, and the remaining parts of the bladder and urethra are re-joined.

Approximately 90% of men with localised cancer live for at least ten years after treatment and for 75% of men, the cancer does not return during this time. Based on these results, this surgery is recognised as being able to cure prostate cancer.

Complications with this type of surgery are common:

- Approximately 5% of men will have urinary incontinence after prostatectomy surgery because of disturbances to the neck of the bladder during surgery.
- 75-85% of men will have erectile dysfunction (impotence). Nerves adjacent to the prostate which govern erection can be damaged during prostate surgery. A number of treatments are available for men to help restore erectile function.

What is Radiation Treatment?

Radiation therapy can be given externally or internally.

External Beam Radiation Therapy

External beam radiation therapy involves small doses of radiation being given over a period of up to seven weeks. It is estimated that about 60-65% of men will remain cancer free after ten years following treatment.

However erectile dysfunction (impotence) occurs in 25-80% of cases depending on patient age and potency prior to treatment. Radiation damage to other tissues that are close to the prostate can result in diarrhoea and inflammation to the bladder but usually settle down quickly. In 10% of men these symptoms can persist.

Brachytherapy

Brachytherapy is available at a limited number of centres in Australia and, because it is a relatively recent development, long term outcomes are not yet known. By placing radioactive 'seeds' directly into the prostate gland, a high dose of radiation can be delivered straight to the cancer cells.

What is Watchful Waiting?

Because of the side effects of other forms of treatment for localized prostate cancer, some men decide to have no treatment. These patients prefer to take a 'watchful waiting' approach and wait to see if any complications from their prostate cancer start to become evident.

This approach is often used for men who are 75 years or older, for those who fear the side-effects of treatment or who may have other health related problems. It is based on the relative slow growth of prostate cancer particularly those of low grade. Unfortunately, some low grade tumours can change and start to grow and progress more rapidly, making it important to continually monitor the cancer growth.

In men deciding to take a 'watchful waiting' approach, the PSA test can be used to measure the progression of the disease.

How is Advanced Prostate Cancer treated?

If the prostate cancer is aggressive and has spread to other parts of the body, hormone therapy in combination with surgery or radiotherapy is often recommended.

What is Hormone Therapy?

The growth of both normal and cancerous prostate cells depends on the androgen, dihydrotestosterone (DHT). Hormone therapy acts by either stopping testosterone production or by blocking the action of testosterone and DHT on tissues. Both types of hormone therapy may be given either continuously or in some instances in cycles where treatment is started and stopped repeatedly (called intermittent hormone therapy).

What are the side effects of hormone therapy?

Most men undergoing hormone therapy will develop a lack of interest in sexual activity (reduced libido) and the ability to have erections (impotence). Other common side effects noted include hot flushes, tiredness and sweating, gradual decrease in body hair and reduced muscle strength. Some men gain weight and develop some breast enlargement. Osteoporosis and reduced cognition may be other side effects.

What is hormone resistance?

About 30% of prostate cancers will shrink during hormone therapy while 30% may not grow any further. About 1 in 5 men experience continued growth of the prostate cancer, despite hormone therapy, within a year of starting treatment.

Resistance to hormone treatment and re-growth of prostate cancer may become evident over time even if the prostate cancer responded initially to this therapy. On average this occurs about 2.5 years after initial treatment. However, about 10% or less may have no sign of re-growth of prostate cancer during 10 years of hormone treatment. Measurement of PSA levels is used to monitor any re-growth of prostate cancer when on hormone therapy (although this is not always accurate).

What are the treatments for hormone resistant prostate cancer?

- **Pain relief** using a variety of medications is an important part of the management of patients with uncontrolled prostate cancer growth.
- **Radiotherapy** which can be given locally to any other site where the prostate cancer has spread to relieve the pain. External beam radiotherapy is usually applied.
- **Steroids** such as synthetic cortisone drugs called prednisolone may sometimes be helpful to control pain.
- **Chemotherapy** is not a major area of success but research continues to identify new options. This treatment can be useful to reduce pain, not to increase survival.

Watchful Waiting As Good As Surgery

Men with prostate cancer who decide not to have surgery and instead opt only for treatment of the symptoms of their disease do as well as men who have surgery, at least in the first six or seven years after diagnosis, according to a study recently published in the *New England Journal of Medicine* (*2002. 347: 781-9*).

From October 1989 to February 1999, 695 men with newly diagnosed prostate cancer were randomly assigned to one of two groups: watchful waiting or radical prostatectomy.

Researchers compared mortality, metastasis-free survival and local progression rates between the two groups for approximately six years.

No significant difference in overall survival was found, although 13% of men died in the watchful waiting group compared to 7% in the surgical group.

"The decision will still be difficult," said Lars Holmberg, a Swedish physician at Uppsala University in Finland, who helped lead the study. "But at least now we have a chance for better informed guesses about a man's future than we did before."

Although the research produced no clear winner between treatments, it adds important details to the complicated picture of risks and benefits that each patient must confront.

Source: Scott Gottlieb
BMJ 2002;325 613

Prostate Cancer Mortality Rates Fall

Australia's cancer survival rates are increasing, as early detection and better treatment methods work together to save people's lives, according to two recent independent studies.

Australia's Health 2002 indicated that the biggest gains in survival rates were in prostate cancer in men and breast cancer in women.

Similarly a NSW Cancer Council study indicated that cancer death rates had fallen by 17 per cent in men, with the greatest drop being observed in prostate cancer mortality.

Source: Daily Telegraph
28 June 2002, p 11; & 16 May 2002, p2

Vasectomy Cancer Link Dispelled

Men who undergo a vasectomy do not increase their risk of prostate cancer, according to a study reported in the *Journal of the American Medical Association* recently.

Though some previous studies have produced mixed findings about a link between vasectomy and prostate cancer, researchers at the University of Otago in Dunedin, New Zealand said their two-year study of 923 prostate cancer victims and 1224 "control" subjects showed no connection.

Source: Courier Mail
20 June 2002, p 12

INTERNET UPDATE

The Andrology Australia website has recently been upgraded to assist men in finding information about particular health disorders.

The new home page, provides clearer navigation to the different health topics and the ability to search for areas of interest.

A separate section on Androgen Use has been included that provides information about the medical misuse of androgens for the treatment of other medical problems such as male infertility and erectile problems.

Information about the abuse of androgens for the purposes of enhancing body image or improving sporting performance is also described.

A 'What's new' feature will provide details of new programs or activities, resources or updates to the website that may be of interest.

Readers are invited to use the feedback page (http://www.andrologyaustralia.org/content/feedback.html) to tell us what you think of the changes.

PROFILE

Professor Gail P Risbridger

Professor Risbridger is a recognized leader in prostate research in Australia. Her studies into hormonal function in both benign prostate enlargement and prostate cancer are of world standard.

A founding member of the Monash Institute of Reproduction and Development's senior research team, Professor Risbridger was awarded an NH&MRC Principal Research Fellowship in 1995.

In 1997 she spent a sabbatical as Visiting Professor at the Department of Anatomy at the University of California, San Francisco where she made significant advances into the testing of estrogen levels in the prostate. Upon her return, she established the Centre for Urological Research in partnership with Associate Professor Mark Frydenberg (Head of Urology, Monash Medical Centre, Melbourne).

Professor Risbridger has been awarded an Australian Academy of Science Fellowship, Kings College/ Monash Fellowship and the Monash University Annual Silver Jubilee Research Prize in recognition for her work in prostate disease.

The intellectual property she generated at Monash University was used to establish the commercial organisation, Prostate Diagnostics Inc.

Professor Risbridger also acts as a consultant for pharmaceutical companies, serves on editorial boards and committees for the National Health and Medical Research Council.

ON THE HORIZON

Improving PSA Testing

With the difficulties of the current PSA test, other ways of measuring PSA have been considered to make the test more sensitive and specific for the detection of prostate cancer. Current ways to improve the specificity of PSA screening are based on the biological features of the PSA molecule.

Most of the PSA found in the bloodstream, including that produced by cancer cells, is attached to a protein and is called the 'bound' fraction. A proportion of PSA may also be 'unbound' and not attached to protein. New tests are being developed to test for these different fractions of PSA.

One of these tests measures the ratio of 'free' or 'unbound' PSA to 'total' PSA in the blood stream. Total PSA is a measurement of both 'bound' and 'free' PSA in the blood stream.

Measuring both the free and total PSA levels may help to tell the difference between men with prostate cancer and men with non-cancerous prostate disease (benign prostatic hyperplasia). Men with prostate cancer will have lower levels of free (or unbound) PSA as a proportion of their total PSA measurement, than men with benign prostatic hyperplasia.

If a man has a high total PSA level, the free to total ratio will help the doctor distinguish between non-cancerous (benign) and cancerous prostate disease. This information will help the patient and doctor when making a decision regarding the need for a biopsy.

Newsletter of Andrology Australia
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