

## Cryotherapy Information Sheet

### Introduction

Cryosurgery is a technique that utilises extremely low temperatures to destroy tissue. In this particular instance cryotherapy is used to treat prostate cancer by freezing the prostate to temperatures  $<-100^{\circ}\text{C}$ . Human tissue is irreversibly destroyed when it reaches a temperature of  $-40^{\circ}\text{C}$  and it rarely survives temperatures below  $-15^{\circ}\text{C}$ .

“Cryosurgery” has been around for more than 100 years, with crude forms of the technique being used to treat skin and gynaecological cancers in 1840. It has been used to treat prostate cancer from the 1960’s, but initially the side effects were worse than the disease. In 1998 a radiologist, Dr Gary Onik, described the ultrasound characteristics of freezing human tissue. Subsequently Dr Jeffrey Cohen and Dr Onik at the Allegheny Hospital in Pittsburgh developed the technique of “percutaneous transperineal ultrasound-monitored cryotherapy of the prostate” (quite a mouthful you quite rightly say – and don’t try to remember it), which is the basis of the present cryosurgical technique that allows safe, effective treatment of prostate cancer in a truly minimally-invasive way.

We have been performing the modern technique of cryotherapy for prostate cancer at The St George Hospital for 10 years and therefore have considerable experience in the method. The new equipment that has recently been obtained has given us cause for considerable excitement as it is a significant advancement and allows us to offer treatment to more men with prostate cancer than was possible previously, with the added bonus that it is safer and more effective!

### How is modern cryotherapy performed?

Using ultrasound a number of “micro” cryoprobes are inserted through the perineum – this is the small area between the testes and the anus – into the prostate. The cryoprobes are 17 Gauge (about the size of needles used to take a blood sample). They are positioned precisely under ultrasound guidance. The ultrasound probe is situated in the rectum, much like the technique used to take prostatic biopsies. The exact number of probes used depends on your prostate (size and shape are important), and can range from as few as 6 to usually a maximum of 20.

The freezing process itself is achieved by a system based on Argon and Helium gases (the Seednet™ system by Oncura). This achieves temperatures well below the  $-40^{\circ}\text{C}$  at which all metabolic functions cease. The extent of the freezing is controlled by the surgeon who monitors the “iceballs” using the ultrasound probe in the rectum. The whole procedure takes between 1.5 – 2 hours.

Patients are usually in hospital overnight, though people are routinely treated as day cases overseas. Most patients they are more or less back at normal activities within a few days. A catheter is left in the bladder for 10-14 days after the treatment to allow time for any swelling in the treated tissue to settle down and to make the passing of urine easier

### **Who is a candidate for cryotherapy of the prostate?**

Men with prostate cancer who fit into one of the categories listed below may be suitable for prostatic cryosurgery:

1. Older men not considered fit enough for surgery, who wish to avoid radiotherapy
2. Men who fail the criteria for Brachytherapy (eg PSA >10 or Gleason score >6)
3. Men who have localised recurrence of prostate cancer following any form of radiotherapy

Cryotherapy is NOT a treatment for prostate cancer that has spread beyond the local area.

It is important that any man who wishes to consider cryotherapy be assessed as to the appropriateness of the procedure as a treatment of their condition and secondarily to ensure there are no technical contra-indications in the individual.

### **Summary**

#### **Advantages**

- Minimally-invasive *alternative* treatment for localised prostate cancer
- Brief hospital stay
- Early recovery / brief recovery time
- Offers the possibility after other treatment failure
- Can be repeated
- Possible after radiotherapy

#### **Potential problems**

- Long term follow-up is not as complete or as extensive as surgery or external beam radiotherapy – therefore sometimes referred to as experimental
- Incontinence (< 5%)
- Erectile dysfunction - 50% +
- Stricture - < 5%
- Fistula (opening between bowel and prostate) - < 1%



## PROSTATE CANCER DATA SHEET

Please fill out the information below as completely as possible and send it to:

St George Public Hospital  
Outpatients Department  
Cryotherapy Clinic  
Gray Street  
Kogarah NSW 2217

Ph: 02 9350 3943

This form will allow some assessment to be made as to your suitability for prostate cryosurgery and possibly save you a wasted consultation. All the information requested is vital for any consideration of cryotherapy.

NAME: .....

D.O.B.: .....

ADDRESS: .....

..... P/CODE: .....

PHONE: .....

The information requested below refers to data at the *time of your diagnosis*.

PSA: .....

Gleason Score:..... + .....

Bone Scan: Positive: