Breakthrough in freezing technology steps up fight against cancer

With a recent Europe-wide report revealing that cancer survival in the UK is still below the European average, the freezing of cells – cryotherapy – is well placed to become a valuable option in the fight against prostate and renal cancer. In March this year, revolutionary new technology, known as the Presice™ Cryotherapy System, was launched by Galil Medical UK Ltd with patented state-of-the-art freezing technology which accurately and effectively destroys prostate cancer and tumours in the kidney.

Cryotherapy is based on the science of freezing at very cold temperatures which kills cancerous cells. Cryotherapy (also known as cryoablation) was first introduced in the 1960's and during the last ten years has become widely used in the USA for treating many types of benign and malignant tumours. In the UK, cryotherapy is now licensed to treat prostate cancer and kidney tumours. An increasing number of this country's leading experts are offering the cryoablation procedure to their patients who are looking for safe and effective cancer treatments and the best possible quality of life. As cryotherapy offers a minimally invasive treatment option with fewer complications and side effects than conventional therapies, minimal blood loss, short hospital stays and good rates of success, it promises to become a major cancer treatment of the future.

The procedure is carried out through keyhole surgery and uses ultra thin cryoablation needles which are inserted into the tumour. Argon gas is then delivered via the needle tip, which creates a large iceball to cover the tumour, freezing it and destroying the cancer cells at sub zero temperatures. The freezing process is then repeated to ensure that every trace of the cancerous cells is eradicated.

Mr Frank Keeley, Consultant Surgical Urologist at Southmead Hospital, Bristol, Department of Urology, Institute of Urology, has successfully treated renal cancer with cryotherapy and supports this high tech approach. He says: "Cryoablation of kidney tumours has been carried out for over 10 years with good medium-term results from American centres. The needle technology has developed considerably since then and I believe that the results from the new, slimmer cryotherapy needles from Galil Medical will be even better. Certainly, they give me even more confidence in the safety and effectiveness of this treatment."

▲ Presice Cryotherapy System and IceVue Planning Software

▲ 17-gauge cryoablation needle produces iceball for targeted ablation

Rosie Cunningham Thomas, President and General Manager of Galil Medical in Europe says: "Galil Medical is at the forefront of developments in cryotherapy. Our new Presice™ System focuses treatment on the patient's cancer, minimising damage to surrounding tissue with a view to improving quality of life. We are working closely with leading clinicians to maximise the value of the technology in patient care. We are optimistic this will extend beyond prostate and renal to other types of cancer in due course."

Prostate Cancer

Earlier this year at their 22nd annual congress in Berlin, the prestigious European Association of Urology (EAU) recognised the important role of cryotherapy in treating cancer of the prostate by including this therapy for the first time in its new guidelines on prostate cancer. This is highly significant as other minimally invasive treatment options are still considered to be experimental or investigational by the EAU.

Prostate cancer is one of the principal medical problems facing the male population today and is the most common male cancer in the UK, accounting for almost a quarter of all male cancers, Each year, nearly 32,000 men in the UK are diagnosed and more than 10,000 die from the disease. Cases are rare in men aged under 50, but it becomes more common with age.

Cryotherapy is an excellent treatment option for many prostate cancer sufferers. The procedure can be used for localised prostate cancer both as a primary treatment and for recurrent cancer where other treatments have failed.

Anthony Purvis from South Shields in Tyne and Wear was diagnosed with prostate cancer four years ago at the age of 65. He actively sought cryotherapy over radiotherapy as a treatment for his prostate cancer as there were reported to be fewer side effects, a speedy recovery and a short hospital stay. Today, he is free of the disease and lives as full a life as he did before the diagnosis.

▲ Anthony Purvis

Anthony had thoroughly considered all prostate cancer treatments and opted for cryotherapy after research on the internet led him to discover that the procedure was used in many prostate cases but not in the UK at that time in 2003. Fortunately his Consultant Surgical Urologist, Professor Damian Greene, from the Sunderland Royal Hospital was forward thinking and arranged for Anthony to travel to the USA for this procedure.

Anthony's positive experience with prostate cryoablation encouraged Professor Greene to set up the first NHS cryotherapy unit in the UK at the Sunderland Royal Hospital, which he still runs today.

He explains: "When Anthony first came to see me, he was very clear about wanting cryotherapy. The procedure was a great success with Anthony still maintaining an excellent quality of life four years later."

▲ Professor Damian Greene

Kidney (Renal) Cancer

Around 7,000 people are diagnosed with kidney cancer every year in the UK with it affecting more men than women and occurring most commonly in middle-aged and older people. Cryotherapy is being increasingly recognised as a viable treatment for patients with small renal tumours.

Mr Chris Anderson, St Georges Hospital, performed the first renal cases in 2004 and continues to offer this treatment today.

Sixteen years ago, at the age of only 44, Alex McLaren from Coventry in the West Midlands was diagnosed with renal cancer and had to have a kidney removed. Last Christmas, he recognised the symptoms and suspected that the cancer was back in his remaining kidney; confirmation of his diagnosis was finally given last June.

Alex explains: "It really looked like I would lose my remaining kidney but after some research on the internet and a chat with my consultant: I knew that kidney cryoablation was the best option for me." On September 14th 2007, Alex underwent laparoscopic cryoablation and was discharged two days after his treatment, with only a little discomfort and minimal scarring. Most importantly, initial results showed his tumour had been completely destroyed.

▲ Mr Frank Keeley

The consultant Surgical Urologist who undertook Alex's procedure was Mr Frank Keeley, who is based at Southmead Hospital, Bristol, Department of Urology, Institute of Urology. Mr Keeley commented: "Alex had limited options because he had only one kidney and his tumour was located very centrally within the remaining kidney. The size and location of the tumour also meant that partial nephrectomy would have been very risky in terms of bleeding and injury to the kidney's drainage system. There was a high probability, in fact, that it would have led to loss of his kidney. Other forms of treatment, such as using radio frequency ablation or focused ultrasound, do not have a good track record for moderately large central tumours."

"Cryoablation, by contrast, is more predictable in its effects on kidney tumours. The ice created by the needles can be dynamically monitored during the case so that adjustments, if necessary, can be made to ensure that the tumour is adequately treated. Because the tumour was located next to the drainage system of the kidney, we used keyhole surgery to protect this and other vital structures from the freezing process. I was delighted to see him recover so quickly from such a complex procedure."

Where Is Cryotherapy Available?

Cryotherapy is available at special centres in both NHS and private hospitals nationwide. To find your nearest centre and practitioner, please contact Galil Medical UK Ltd at:

The Office Building Gatwick Road
Manor Royal,
Crawley
West Sussex, RH10 9RZ
Tel: 01293 459848 or visit
www.galilmedical.com/pages/breakthrough-in-freezing.asp
to find your nearest centre and practitioner.