



Urology Update

Treatment Alternatives & Trends

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New Minimally Invasive BPH Treatment Available

My urology practice offers a promising minimally invasive heat treatment for BPH called Cooled TUMT® (transurethral microwave thermotherapy). Cooled TUMT is performed as a single 30-minute office procedure with oral medications and topical anesthesia only. I find Cooled TUMT is an effective alternative to drugs and surgery for patients with moderate and severe lower urinary tract symptoms (LUTS) associated with BPH, and in this Urology Update I will review the relative merits and roles of drugs, surgery and newer minimally invasive treatments such as Cooled TUMT.

Recent Trends in BPH Treatment

Treatment alternatives for BPH improved markedly in '90s with the FDA approvals of Proscar® and alpha blockers such as Hytrin®, Cardura® & Flomax®. Subsequent to these approvals, medical management of BPH came into widespread use and the number of patients undergoing Transurethral Resection of the Prostate (TURP) declined markedly. In the current decade, office-delivered minimally invasive treatments (MITs) have become the fastest growing new treatment modality. These MIT's are based on microwave, radiofrequency or laser energy, but they all have one factor in common: They deliver heat in order to destroy enlarged prostatic tissue.

The Prevalence of BPH

BPH, or prostate enlargement, affects approximately 50 percent of men over the age of 50, and is the most common cause of lower urinary tract symptoms such as urinary frequency, urgency, incomplete

emptying and nocturia. Over 9 million men in the United States are diagnosed with BPH yet only about 25% actively seek treatment with the balance watching and waiting. Of those treated, over 2 million receive drug therapy, primarily alpha blockers, 150,000 per annum have surgery, and 70,000 choose an MIT with this number rising rapidly. Since primary care physicians see an average of 10 men over the age of 50 every day, the techniques used to diagnose and treat these patients have widespread implications. BPH is a progressive condition with advancing age, prostate size, PSA and AUA symptom score predictive of more serious complications such as urinary retention, bladder infections, renal deterioration, urinary incontinence, and overall, further worsening of symptoms.

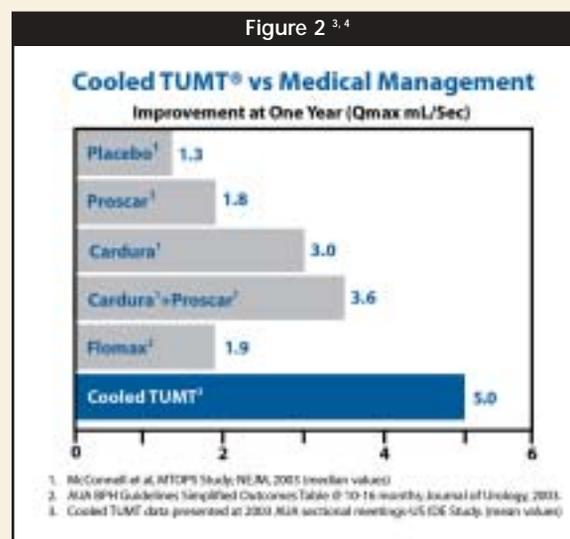
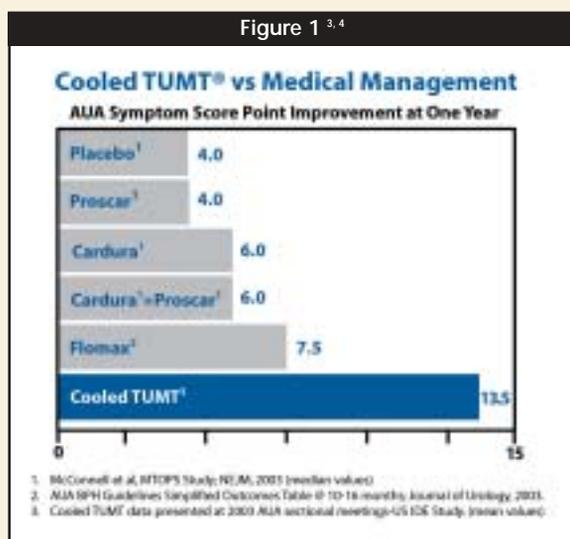
Traditional Solutions

Historically, drug therapy and surgery have been the sole therapeutic options for men with symptomatic BPH.

Surgery. Prior to 1993, surgery was the only therapeutic solution available for men with prostate enlargement. Today, it is still offered to patients who do not respond to less invasive treatments or who cannot tolerate or do not respond to medication for an enlarged prostate. While surgery may be the best option for some patients and can provide a high degree of symptomatic relief, it comes with potential risks and costs, including erectile dysfunction (25 percent, on average), incontinence (1 to 3 percent), retrograde ejaculation (75 percent) and blood transfusion (12 percent)¹. In addition, surgery is an inconvenient option involving anesthesia, hospitalization for one or two days and a convalescence period of up to six weeks.

Drug Therapy. Medication is a more convenient alternative to surgery because it allows patients to avoid hospitalization. However, medication does not provide the same results as surgery or MITs in terms of symptom relief or improvement in urinary

flow rates (see Figures 1 & 2). **Up to 40 percent of patients discontinue medical therapy in the first year** due to issues including lack of efficacy and/or intolerable side effects. Medication can also become an enormous financial burden, even after the new Medicare prescription drug benefit comes into effect in 2006. Common side effects associated with medication include impotence (5-10 percent), retrograde ejaculation (5-18 percent), and dizziness and nausea (10-23 percent)².



Combination Medical Therapy. Recently, new data has been published regarding the effect on disease progression of administering the simultaneous administration of an alpha blocker and a five alpha reductase inhibitor². While slowing disease progression is an important factor, most patients wish to go further and obtain symptom improvement. At one year, the symptom improvement of combined medical therapy is no different than an alpha blocker alone (figure 1), and such modest outcomes – in addition to side effects and added expense – are a key reason for the high number of patients electing to discontinue medical management.

The ideal solution to treat symptomatic patients would be a therapy that offers a high degree of efficacy, minimal side effects, avoidance of a costly hospitalization, and convenience for the patient. One MIT in particular, Cooled TUMT, offers such a solution.

What is Cooled TUMT?

Cooled TUMT is a nonsurgical, 30-minute office procedure that has been FDA-approved since 1996 and is covered by Medicare and most private insurers. It has been endorsed by the BPH treatment guidelines issued by the American Urological Association (2003), the European Association of Urology (2001), and the World Health Organization (2000).

For patients who are unwilling to undergo surgery or for whom drug therapy has been unsatisfactory, Cooled TUMT may fill what has been a gap in treatment alternatives. In addition, the superior efficacy, durability and cost savings of the procedure, coupled with the convenience of an office-based treatment, has led an increasing number of physicians and patients to use Cooled TUMT as a first-line treatment rather than as an alternative only for those who failed medical management.

The Cooled TUMT Procedure

Using heat to treat diseased prostatic tissue – specially the application of microwave energy – has been used since 1982⁵. Cooled TUMT utilizes microwave energy to induce coagulation necrosis of excessive BPH tissue. The temperatures within the prostate need to reach a thermal threshold above 50°C to effectively kill the hyperplastic prostatic tissue resulting in resorption of dead tissue and reduction of BPH symptoms. However, temperatures at that level can pose a significant risk to the mucosa of the prostatic urethra. To protect the tissue, cooled water is

circulated to preserve the prostatic urethra, providing maximum comfort during the procedure and minimizing the morbidity and recovery time. The temperature of the rectum is also continuously monitored to assure safety. Patients go home directly after the treatment and can usually resume normal activities immediately.

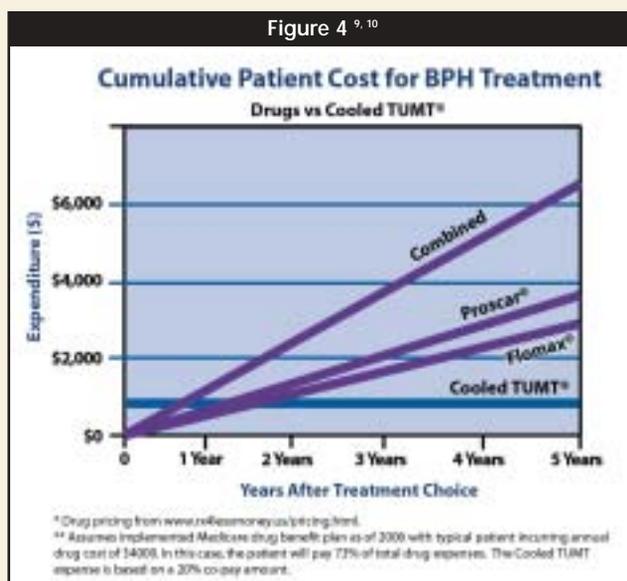
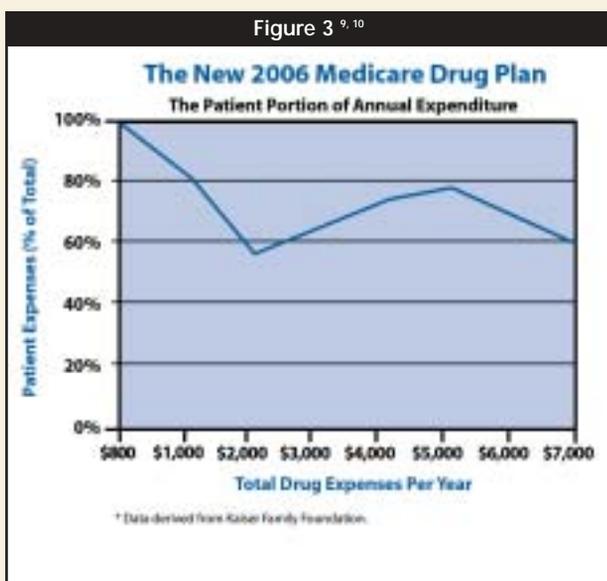
Cooled TUMT Results

This procedure was first used in the early '90s in FDA-controlled clinical trials. Since then, multiple studies conducted at more than 50 centers worldwide and involving more than 2200 patients have demonstrated significant symptom and urine flow improvements with minimal complications. The published rate of patient satisfaction is approximately 80%^{6,7}. Cooled TUMT is available with the Targis® and Prostatron® Systems from Urologix, Inc.

A head-to-head randomized study of Cooled TUMT vs alpha blockers demonstrated significantly superior clinical outcomes for Cooled TUMT⁸. The study concluded that the TUMT group experienced a 35 percent greater reduction in symptom score, a 22 percent greater increase in peak flow rate, and a 43 percent greater improvement in quality of life after 18 months, than the group on medication. In addition to early results, physicians and patients are increasingly concerned about the potential deterioration of bladder function from watchful waiting and long term administration of medications that do not significantly reduce detrusor pressure during voiding. While more investigation of the issue is needed, many feel that earlier intervention with MITs may head off more significant trouble, such as chronic urgency and urge incontinence, by reducing detrusor pressure.

Cost Savings for the Patient

Most patients do not wish to incur the lifetime of expense and side effects associated with medical management, and, in comparative terms, MITs actually pay for themselves after only 1.5 years, even when the new Medicare Drug Bill is in effect in 2006. Figure 3 summarizes the portion of medical expense Medicare eligible patients will bear when the new 2006 Medicare drug plan is in effect. Next, for a typical patient with \$4000 of annual medical expense, Figure 4 illustrates the comparative, cumulative cost to the patient of medical management options vs Cooled TUMT. Assuming patients remain on therapies for the entire five year period, the difference in cost is substantial.



New Era of Treatment

Cooled TUMT represents a new era of treatment for symptomatic lower urinary tract symptoms secondary to BPH. While medical management and surgery have clear and continuing roles, the high failure rate of drug therapy, the high cost of treating BPH with surgery and the increasing patient demand for simple, less invasive procedures have led to the development of this

remarkable technology. This relatively new, minimally invasive treatment alternative is quick and easy to perform, has durable, attractive outcomes, and may become the new "gold standard" of BPH treatment.

Diagnosis and Referral of BPH

The following is recommended for the initial evaluation of all patients with LUTS suggestive of BPH: a medical history, digital rectal exam (DRE), urinalysis, PSA and AUA Symptom Score.

I suggest that the following be considered as candidates for urologic referral:

- Failed pharmacologic management
- Desire to avoid expense of medications
- PSA >4ng/mL or free/total PSA <25%
- Prostate nodule or abnormal DRE
- Hematuria
- Urinary retention
- Azotemia
- Recurrent urinary tract infections

Please contact me for additional information, to observe a treatment, or for patient education and screening materials on Cooled TUMT.

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References:

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5. Yerushalmi et al, Hyperthermia for treatment of carcinoma of the prostate: a preliminary report, *Prostate* 3(6):623-630.
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8. Djavan et al, Targeted Transurethral Microwave Thermotherapy vs Alpha-Blockade in Benign Prostatic Hyperplasia. Outcomes at 18 months. *Urology* 2001.
9. Data derived from Kaiser Family Foundation.
10. Drug pricing from www.rx4lessmoney.us/pricing.htm. Assumes Cooled TUMT patient co-pay amount of 20%.