



**Preliminary Results of a Randomized Trial Comparing Laser Interstitial  
Thermotherapy and Transurethral Resection of the Prostate for Benign Prostatic  
Hyperplasia**

*Drs. Seck L. Chan, Raymond Fay, Robert Kahn, Ira Sharlip, San Francisco, California*

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**Abstract**

**Introduction**

Benign prostatic hyperplasia is a common disorder in elderly men that can cause bladder outflow obstruction. Medical treatment is effective only in a small proportion of patients. In more advanced cases, transurethral resection of the prostate (TURP) is the gold standard for the past 40 years. Because of certain undesirable associated morbidity, there is a continual search for other more convenient alternative surgical treatment. Laser interstitial thermotherapy (ITT) utilized a low power (max 10 watts) diode laser to heat up the interstitium of the prostate up to 85°C without causing much destruction of the urethra mucosa to minimize post-op irritative symptoms. Tissue coagulative necrosis is followed by atrophy and shrinkage of the prostatic lobes to reduce outflow resistance. This is a report of the first randomized trial carried out in the United States comparing the 2 treatment modalities.

**Material and Methods**

From July 1995 to February 1996, 44 patients were randomized to either ITT or TURP. Inclusion criteria includes patients with AUA symptom score of >10, maximum urinary flow rate <12 cc/sec and post-void residual volume <300 cc. Twenty patients received ITT and 24 patients underwent TURP. Spinal anesthesia was used for most patients, a few had local prostatic block supplemented with IV sedation. ITT patients were discharged on the same day whereas TURP patients stayed in hospital overnight. The preliminary 3 month results are analyzed and reported.

**Results**

Patients who underwent ITT had an initial mean AUA symptom score of 24.4, maximal flow rate of 7.1 cc/sec and post-void residual volume of 68 cc. The comparable parameters for TURP patients were 22.6, 8.8 cc/sec and 63 cc respectively. At 3 months post-op, ITT patients showed a decrease in symptom score to 13.6 (44.3%), increase in maximal flow rate to 13.4 cc/sec (60.3%) and decrease in residual volume to 27 cc (60.3%). These outcome parameters are comparable to age-matched TURP patients. Both groups will be followed every 3 months for a total of 1 year.

## **Summary**

Preliminary results at 3 months after ITT or TURP in patients with symptomatic BPH are comparable. ITT can be performed in an ambulatory setting under regional anesthesia with minimal risk of bleeding. The improvement in symptoms is slower relative to TURP. Despite its lower morbidity, the durability of ITT awaits further evaluation at one year.