

# New Trends in Treatment of Benign Prostatic Hyperplasia

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Benign prostatic hyperplasia (BPH) is a disease that causes lower urinary tract symptoms (LUTS) and is one of the most common diseases associated with aging. BPH is observed histologically in almost half of men in their 60s, and in most of men in their 80s. BPH results from histological proliferation of smooth muscle as well as epithelial cells in the prostatic transitional zone. The objective of treatment for LUTS/BPH is to improve quality of life and to treat and prevent any complications including urinary tract obstruction, urinary retention, infection and more. Therapeutic methods are largely divided into watchful waiting, medical management and surgical management. Of these, watchful waiting is applicable to patients with mild symptoms, or with moderate to severe symptoms but no complications. It requires annual measurement of prostate volume as well as assessment of flow rate. For medical management, representative drugs are alpha adrenergic blockers and 5 alpha-reductase inhibitors (5ARIs). 5ARIs lower serum dihydrotestosterone (DHT) and reduce prostate volume so as to relieve symptoms. Alpha adrenergic blockers do not affect prostate volume or the level of prostate-specific antigen but improve symptoms by relaxing the smooth muscle cells of the prostate. Surgical management is indicated when patients have moderate to severe symptoms accompanied by complications such as infection, hematuria and upper urinary tract obstruction, or when they do not respond to medical management. The goal of the surgical management of BPH is to reduce the bulk of the prostate in order to relieve obstruction of the urinary tract. Currently, transurethral resection of the prostate (TURP) is the gold standard for surgical treatment. However other surgical techniques have been developed; they include transurethral holmium laser enucleation of the prostate (HoLEP), photoselective vaporization of the prostate (PVP), transurethral incision of the prostate and

transurethral vaporization of the prostate [1]. Recently, laser treatment has challenged TURP as the surgical treatment of choice. The first reports of prostate laser therapy used neodymium: yttrium aluminum garnet (Nd:YAG) lasers. The Nd: YAG laser produces energy at a wavelength of 1064 nm. It has a low energy density, causing deep coagulative tissue necrosis and considerable thermal injury. PVP using the 80 W potassium-titanium-phosphate (KTP) laser was first reported in 2003. Since then, rapid adoption and diffusion of this laser technique has taken place due to the promising results obtained and vigorous marketing. However, long-term results of high quality studies are still lacking. In fact, holmium laser enucleation of the prostate (HoLEP) is the only surgical technique that has been proven to acutely remove significant amounts of prostatic adenoma and to have minimal peri- and post-operative morbidity equivalent to TURP [2]. The HoLEP laser is a solid-state pulsed laser with a wavelength of 2,010 nm, which is efficiently and rapidly absorbed by water. The laser penetrates only 0.4 mm into tissue, and mainly causes vaporization. It has excellent cutting ability and achieves a good level of hemostasis. During HoLEP, iso-osmotic saline solution is used as the irrigation fluid so as avoid TUR syndrome. Furthermore it can be used on any size of prostate. Although HoLEP has a steep learning curve, many studies have shown that the long-term surgical results of HoLEP are at least equivalent to those of TURP. Therefore HoLEP is a genuine alternative to TURP.

## Reference

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