Benign Prostatic Hyperplasia: Surgical Therapy & New Technology V

Podium 41

Monday, May 1, 2023 **7:00 AM-9:00 AM**

PD41-01

TRENDS IN THE DIAGNOSTIC AND SURGICAL MANAGEMENT OF BENIGN PROSTATIC HYPERPLASIA (BPH) IN THE UNITED STATES: ANNUAL CHANGES IN THE SELECTION OF TREATMENT OPTIONS AND AVERAGE COSTS DIFFERENTIAL FOR DIAGNOSTIC/SURGICAL TECHNIQUE

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INTRODUCTION AND OBJECTIVE: Transurethral resection of the prostate (TURP) is the gold standard treatment for benign prostatic hyperplasia (BPH). However, laser surgery techniques (e.g., photoselective vaporization of the prostate [PVP], holmium laser, thulium laser enucleation of the prostate [HoLEP or ThuLEP]), and minimally invasive treatment options (e.g., UroLift®) are increasingly replacing TURP. The aim of the study is to present the annual rates of BPH surgery and to analyze recent trends in the utilization of newer surgical modalities and any changes in medical costs related to these treatments over a 15-year period in the US.

METHODS: Patient data was collected from the Optum Clinformatics® Data Mart Claims Database. Trends and distribution of surgical BPH techniques over the years of enrollment were analyzed across US regions. We then reviewed trends in adoption of diagnostic BPH methods including urodynamic studies, cystourethroscopy, transrectal ultrasound, prostatic biopsy, uroflowmetry, and the measurement of post-void residual urine volume (PVR). Finally, incidental diagnoses of prostate cancer (PCa) detected during BPH procedures were recorded over the years to depict the trends in PCa detection as well as median prostate specific antigen (PSA) values associated with BPH patients ultimately treated with a procedure.

RESULTS: N=51,448 patients underwent BPH procedures from 2004 to 2017. There was a significant increase in the annual rate from 770 in 2004 to 6,571 in 2017. The mean patient age (±SD) increased from 67.6 years old (± 8.4) in 2004 to 73.4 years old (±8.4) in 2017. More than 60% of patients underwent cystourethroscopy and post-void residual urine check for workup prior to surgical management. TURP was the most common and PVP was the second most common BPH procedure. The total number of BPH diagnoses were 44,820 and the median cost for each procedure was $1459, $1875, $1419, and $3284 for TURP, PVP, HOLEP/ThULEP, Urolift, respectively. The median overall cost was $2471. With regard to the costs of treating BPH surgically, the diagnostic and treatment costs demonstrated annual increases while the detection rate of prostate cancer after BPH surgery gradually decreased from 19.87% in 2004 to 5.78% in 2017.

CONCLUSIONS: We found recent trends in BPH management that demonstrates that alternative methods are starting to replace the traditional TURP technique, although TURP still remains the most common procedure. Future studies should assess whether these newer methods are both efficacious and cost effective over the long term. Of note, the cumulative incidence of PCa diagnosis was reduced over time, likely multifactorial in nature.

Source of Funding: None

PD41-02

12-MONTH OUTCOMES FROM THE FIRST NORTH AMERICAN STUDY OF THE ZENFLOW SPRING SYSTEM FOR THE TREATMENT OF BENIGN PROSTATIC HYPERPLASIA (BPH)

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INTRODUCTION AND OBJECTIVE: The ZEST-CAN study is a prospective single-arm study evaluating the Zenflow Spring System for BPH. The Zenflow Spring System is a novel minimally invasive surgical therapy (MIST) that delivers an appropriately sized nitinol stent-like device into the prostatic urethra displacing the lateral lobes for improved urinary flow.

METHODS: Ten (10) subjects received the device at 3 centers in Canada. Symptom improvement was measured utilizing the International Prostate Symptom Score (IPSS) and IPSS-QOL, and functional improvement was measured by peak urinary flow rate (Qmax). Erectile and ejaculatory function were evaluated utilizing validated questionnaires. The clinical events committee independently adjudicated any adverse event.

RESULTS: Subjects treated with the Zenflow Spring showed a significant reduction in IPSS from baseline to 12 months (21.2 vs 11.4, $p<0.01$), representing a 47% reduction in IPSS. IPSS QOL significantly improved from baseline to 12 months (5.4 vs 2.4, $p<0.010$, representing a 56% improvement. Qmax improved from 9.7 mL/sec at baseline to 14.0 mL/sec after treatment ($p<0.05$) representing a 45% improvement. There were no changes in sexual or ejaculatory function as assessed by the validated questionnaires. The responder rate at 12 months calculated as those with 30% improvement in IPSS was 70%. (7/10 subjects). Adverse events post procedure were typically mild and transient and common to events reported in similar procedures.

CONCLUSIONS: The Zenflow Spring System resulted in immediate and significant symptomatic improvements from 3 through 12 months. Subjects experienced improvements in symptoms, quality of life, maximum flow rate without any sexual dysfunction through 12 months of follow up. These results are currently being validated through a large, multiple centers, prospective randomized study in the United States and Canada.

Table 1. Treatment Outcomes with the Zenflow Spring System

Measure	Baseline (n-10)	3 Month (n=10)	12 Month (n=10)
IPSS Mean ± SD	21.2 ± 4.28	11.7 ± 7.81*	11.4 ±6.70*
IPSS-QOL Mean ± SD	5.4 ± 0.87	2.9 ± 1.91*	2.4 ± 1.65*
Qmax (mL/sec) Mean ± SD	9.67 ± 2.48	11.2 ± 5.27	14.01 ± 4.69*

** Indicates paired t-test (compared to Baseline) p-value < 0.05*

***Paired Qmax data n=9; due to invalid uroflow exclusions*

Source of Funding: Zenflow Inc