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# A Study on Clinical Profile of Patients with Benign Prostatic Hyperplasia

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**ABSTRACT**
BPH may cause physical compression of the urethra and result in anatomic bladder outlet obstruction (BOO) through two distinct mechanisms: First, an increase in prostate volume, termed the static component., second, an increase in stromal smooth muscle tone, termed the dynamic component. 3 BOO, in turn, may present clinically as lower urinary tract symptoms (LUTS), urinary tract infections, acute urinary retention (AUR), renal failure hematuria and bladder calculi. Patients presenting with lower urinary tract symptoms due to benign prostatic hypertrophy in whom surgery was strictly indicated were enrolled as were patients with disturbing, drug resistant LUTS, in accordance with European association of urology guidelines. Patients IPSS symptom score were statistically similar in both the groups with p value of 0.098+QOL score were statistically similar in both the groups with p value of 0.537.

## INTRODUCTION

Benign prostatic hyperplasia (BPH) is a histological diagnosis associated with unregulated proliferation of connective tissue, smooth muscle and glandular epithelium within the prostatic transition zone. Prostate tissue is composed of two basic elements: A glandular element composed of secretory ducts and acini and a stromal element composed primarily of collagen and smooth muscle. In BPH, cellular proliferation leads to increased prostate volume and increased stromal smooth muscle tone. McNeal describes two phases of BPH progression. The first phase consists of an increase in BPH nodules in the periurethral zone and the second a significant increase in size of glandular nodules[1,2]. BPH may cause physical compression of the urethra and result in anatomic bladder outlet obstruction (BOO) through two distinct mechanisms: First, an increase in prostate volume, termed the static component., second, an increase in stromal smooth muscle tone, termed the dynamic component[3]. BOO, in turn, may present clinically as lower urinary tract symptoms (LUTS), urinary tract infections, acute urinary retention (AUR), renal failure hematuria and bladder calculi[4]. Notably, two factors complicate the natural history and clinical presentation of BPH, BOO and LUTS; first, prostate volume does not linearly correlate with the severity of BOO or LUTS and second, progressive BPH and BOO can lead to primary bladder dysfunction, which in turn can exacerbate the severity of LUTS independently of BOO[5]. Collectively, BPH, BOO and LUTS are associated with increased risks of mortality, depression, falls and diminished health-related quality-of-life as well as with billions of US dollars in annual health expenditures[6]. While age and genetic factors play a role in the development of BPH and BOO, many modifiable variables contribute as well.

## MATERIALS AND METHODS

**Study Population:** Study population included the patients presenting with LUTS who underwent monopolar or bipolar TURP. It included mixed population from different states of the country and also from across the country.

**Sample Size and Sample Technique:** Our sample size was 90 patients in each group. In this study the mean amount of prostatic tissue (±SD) resected was 12.27±8.67 g in the TUR-P group and 16.87±6.64 g in the TURIS group (p=0.047). Considering the significant mean difference from the previous study listed above, we calculated the sample size to be 45 with confidence interval of 95%, power of 80%. Expecting an attrition rate of 10% in the sample size, the sample size was rounded minimum 50 per group. But at the end of the study our total sample size was 90 patients in each group.

**Study Design:** This was a prospective study to compare the clinical outcomes in terms of symptom improvement and early postoperative results after monopolar or bipolar transurethral resection of prostate for benign prostatic hyperplasia.

**Inclusion Criteria:** Patients presenting with lower urinary tract symptoms due to benign prostatic hypertrophy in whom surgery was strictly indicated were enrolled as were patients with disturbing, drug resistant LUTS, in accordance with European association of urology guidelines.

**Exclusion Criteria:**

- Prostatic cancer.
- Urethral stricture.
- Neurogenic bladder.
- Active urinary infection.
- Previous Prostate surgery.
- Patients with coagulopathy.
- Patients on anticoagulant therapy which cant be discontinued.
- Associated bladder stones.
- Inability to participate in study sue to dementia.
- If prostatic cancer was found on histopathology or developed during the follow up were excluded.

## RESULTS AND DISCUSSIONS

**Table 1: Age Distribution of Patients Studied**

| Age in years | Monopolar | | Bipolar | |
|---|---|---|---|---|
| | No | % | No | % |
| 50-60 | 31 | 34.4 | 39 | 43.3 |
| 61-70 | 46 | 51.1 | 36 | 40.0 |
| 71-80 | 13 | 14.4 | 14 | 15.6 |
| >80 | 0 | 0.0 | 1 | 1.1 |
| Total | 90 | 100.0 | 90 | 100.0 |
| Mean ± SD | 64.37±6.74 | | 63.63±8.23 | |

Samples are age matched with P=0.514.

**Table 2: VOL in Two Groups Studied**

| VOL | Monopolar | | Bipolar | |
|---|---|---|---|---|
| | No | % | No | % |
| <30 | 5 | 5.6 | 4 | 4.4 |
| 30-40 | 38 | 42.2 | 29 | 32.2 |
| 41-50 | 20 | 22.2 | 25 | 27.8 |
| 51-60 | 12 | 13.3 | 17 | 18.9 |
| 61-70 | 12 | 13.3 | 11 | 12.2 |
| 71-80 | 3 | 3.3 | 4 | 4.4 |
| Total | 90 | 100.0 | 90 | 100.0 |
| Mean ± SD | 46.13±12.88 | | 47.51±12.85 | |

Prostate volume is statistically similar in two groups with P=0.473.

**Table 3: Patients in Urinary Retention on Catheter Preoperatively**

| Pre-opcatherisation | Monopolar | | Bipolar | |
|---|---|---|---|---|
| | No | % | No | % |
| No | 73 | 81.1 | 70 | 77.8 |
| Yes | 17 | 18.9 | 20 | 22.2 |
| Total | 90 | 100.0 | 90 | 100.0 |

Patients with acute urinary retention on catheter is statistically similar in two groups with P=0.580.

**Table 4: ASA Grade in Patients Studied**

| ASA Grade | Monopolar | | Bipolar | |
|---|---|---|---|---|
| | No | % | No | % |
| Grade 1 | 42 | 46.7 | 41 | 45.6 |
| Grade 2 | 47 | 52.2 | 47 | 52.2 |
| Grade 3 | 1 | 1.1 | 2 | 2.2 |
| Total | 90 | 100.0 | 90 | 100.0 |

ASA grade distribution is statistically similar in two groups with P=1.000.

**Table 5: Comparison of Pre-Operative Findings in Two Groups Studied**

| Variables | Pre-Operative | | |
|---|---|---|---|
| | Monopolar | Bipolar | P-value |
| IPSS | 23.18±1.96 | 22.71±1.81 | 0.098+ |
| QOL | 3.90±0.70 | 3.97±0.74 | 0.537 |
| QMAX | 9.52±1.01 | 9.47±1.14 | 0.810 |
| HB | 12.23±0.82 | 12.27±1.08 | 0.786 |
| PCV | 35.91±2.79 | 35.80±2.45 | 0.777 |
| Na | 139.44±3.58 | 139.52±3.10 | 0.877 |

Patients IPSS symptom score were statistically similar in both the groups with p value of 0.098+ QOL score were statistically similar in both the groups with p value of 0.537. Preoperative Qmax in both groups were statistically similar in both groups with p value of 0.810. Preoperative hemoglobin in both groups were statistically similar in both groups with p value of 0.786. Preoperative hematocrit in both groups were statistically similar in both groups with p value of 0.777. Preoperative serum sodium in both groups were statistically similar in both groups with p value of 0.877.

Benign prostatic hyperplasia is one of the common old age problem in male population all over the world. Enlargement of prostate leads to development of variety of lower urinary tract symptoms. Treatment options for benign hyperplasia of prostate include watchful waiting, medical management and surgical management. TURP, developed in 1920s, is considered the cornerstone of surgical management for BPO, due to the procedure's outstanding, well-documented, long-term treatment efficacy. Meanwhile, the associated morbidity of TURP has been reported to be as high as 11.1%. The UTI rate is 3.6%, TUR syndrome is found in 1.4% of patients and blood transfusion is required by 2.9% of patients. Furthermore, the urethral stricture rate is 2.2-9.8% and 0.3-9.2% of patients may have bladder neck stricture in the longer term. After five years, the re treatment rate range is 3 to 14.5%[5]. Traditionally TURP is done with monopolar current in which current goes through the patient's body and reach the skin plate placed at contact point. The basic difference in bipolar TURP is current pass through one stem and returned through another one without going through patients body and it utilizes the lower voltages (220-320Vrms). Creation of plasma bubble at the resection site is basic principle behind the resection principle of bipolar TURP. Different type of bipolar working machines are available in the market which include.

- Gyrus plasma kinetic system or PK system.
- TURIS system.
- Bipolar vista CTR system,
- Karl Storz system etc.

In our prospective study we used TURIS system for bipolar TURP[8]. Regarding comparisons of M-TURP and B-TURP to date, several RCTs and their meta-analyses have been published. The bipolar TURP system appears promising in regards to minimizing the morbidity of standard monopolar TURP.

## CONCLUSION

Prostate volume is statistically similar in two groups with P=0.473.Patients with acute urinary retention on catheter is statistically similar in two groups with P=0.580.

## REFERENCES


1. Singhania, P., D. Nandini, F. Sarita, P. Hemant and I. Hemalata, 2010. Transurethral resection of prostate: A comparison of standard monopolar versus bipolar saline resection. Int. braz j urol, 36: 183-189.
2. Hawary, A., K. Mukhtar, A. Sinclair and I. Pearce, 2009. Transurethral Resection of the Prostate Syndrome: Almost Gone but Not Forgotten. J. Endourology, 23: 2013-2020.
3. Erturhan, S., A. Erbagci, I. Seckiner, F. Yagci and A. Ustun, 2007. Plasmakinetic resection of the prostate versus standard transurethral resection of the prostate: A prospective randomized trial with 1-year follow-up. Prostate Cancer Prostatic Dis., 10: 97-100.
4. Autorino, R., M.D. Sio and M. D'Armiento, 2007. Bipolar plasmakinetic technology for the treatment of symptomatic benign prostatic hyperplasia: evidence beyond marketing hype? BJU Int., 100: 983-985.
5. Fagerström, T., C.R. Nyman and R.G. Hahn, 2011. Complications and Clinical Outcome 18 Months After Bipolar and Monopolar Transurethral Resection of the Prostate. J. Endourology, 25: 1043-1049.
6. Kshitij, R., R. Abid and K.J. Devendra, *et al.*, 2019. Comparative assessment of monopolar versus bipolar transurerthral resection of prostate for the management of benign prostatic enlargement. Urological Science., 30: 262-265.
7. Karaman, M.I., C. Kaya, M. Ozturk, M. Gurdal, S. Kirecci and N. Pirincci, 2004. The Comparison of Transurethral Vaporization Using PlasmaKinetic™ Energy and Transurethral Resection of Prostate: 1-Year Follow-Up. J. Endourology, Vol. 18 .10.1089/end.2005.19.734.

8. Patankar, S., A. Jamkar, S. Dobhada and V. Gorde, 2006. PlasmaKinetic Superpulse Transurethral Resection versus Conventional Transurethral Resection of Prostate. J. Endourology, 20: 215-219.