

# Incidence of Early Postoperative Complications in Patients with Comorbidities Undergoing Transurethral Resection of the Prostate

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**ABSTRACT**

**Introduction:** BPH is a common condition among ageing men, often causing lower urinary tract symptoms for which TURP is usually indicated. Early post-operative complications are still a concern, especially in patients with co-morbidities. This study was therefore designed to evaluate the incidence and pattern of early postoperative complications in patients with co-morbidities undergoing TURP. **Methods & Materials:** The prospective observational study was carried out at the Department of Urology, BIRDEM General Hospital, Dhaka, Bangladesh, from November 2016 to May 2017. 50 patients undergoing TURP for benign prostatic enlargement were included. Data on demographic variables, comorbidities, operative details, and early postoperative complications were analysed using SPSS version 20. **Results:** The patients' mean age was  $68.7 \pm 8.1$  years, and 84% had at least one comorbidity. Pre-existing conditions included diabetes mellitus in 66% and urinary tract infection in 54%. In the early postoperative period, 22% of the patients developed complications such as hematuria (16%), clot retention (8%), urinary incontinence (6%), and failure to void (6%). **Conclusion:** Early postoperative complications following TURP in patients with comorbidities are significantly higher. The number and type of comorbid conditions strongly influence morbidity.

**Keywords:** Benign Prostatic Hyperplasia, Postoperative Complications, Hematuria, Clot Retention, Urinary Incontinence

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**INTRODUCTION**

Benign prostatic hyperplasia is a very common condition of the ageing male, resulting in lower urinary tract symptoms. Its histological prevalence increases with age: approximately 50% of men will develop it by the age of 60 and up to 90% by the age of 85 [1]. Transurethral resection of the prostate has long been regarded as the gold standard for the surgical treatment of BPH. Newer techniques have been developed during recent decades, but TURP remains one of the most widely used procedures today because of its established efficacy and long-term results. However, early postoperative complications still pose significant challenges, especially for patients with comorbidities. With ageing, there is a progressive decline in organ function and physiological reserve which may be disruptive to recovery following surgical stress. The majority of the patients undergoing TURP are elderly and often have concurrent systemic diseases such as hypertension, diabetes mellitus, ischemic heart disease, chronic kidney disease, or chronic pulmonary disorders. These comorbidities can substantially affect the incidence and severity of the postoperative complications. Previous studies have found that nearly 70% of men undergoing TURP have at

least one comorbidity, with a clear correlation between comorbidity burden and early postoperative morbidity [2]. Similarly, comorbidities have been shown to significantly enhance postoperative risk and complication rates following prostate surgery across large population-based cohorts [3]. Despite advances in modern surgical and anaesthetic techniques, early postoperative complications such as haemorrhage, urinary tract infection, transient incontinence, and clot retention are still encountered. Studies have shown that although advances in surgical equipment and perioperative care have reduced mortality, the overall frequency of early complications after TURP remains largely unchanged [4]. Further evidence points out that though bipolar resection diminishes intraoperative bleeding when compared with the monopolar approach, the rates of early postoperative urinary infection and dysuria remain similar, indicating that comorbidities continue to play a more decisive role than the surgical technique per se [5]. Patients on anticoagulant or antiplatelet therapy become more susceptible to bleeding in the postoperative period, whereas patients with diabetes or renal dysfunction may have impaired wound healing or higher infection rates. Meta-analyses have identified comorbidity as

one of the main determinants of early postoperative morbidity across different transurethral modalities [6]. Even techniques that have utilized high-power lasers have failed to completely avoid early complications like hematuria and retention in patients with complex medical histories [7]. It follows then that patients with comorbidities who undergo transurethral resection of the prostate have a higher risk of developing early postoperative complications such as bleeding, urinary tract infection, clot retention, and transient incontinence. Previous reports have indicated that most of the patients undergoing TURP had at least one comorbidity, while a significant portion developed early post-operative complications [8,9]. This study aims to evaluate the incidence and pattern of early postoperative complications among patients with comorbidities undergoing transurethral resection of the prostate.

**METHODS & MATERIALS**

This prospective observational study was carried out in the Department of Urology, BIRDEM General Hospital, Dhaka, Bangladesh, for six months, from November 2016 to May 2017. Fifty patients with a diagnosis of benign enlargement of the prostate, who were admitted for TURP, were selected using purposive (nonrandomized) sampling. Patients undergoing TURP for bladder outlet obstruction who had provided informed consent were included. The following were excluded: patients undergoing concomitant bladder or urethral surgery, repeat TURP, bladder injury managed by means other than surgery, and obstruction due to causes other than benign prostatic hyperplasia. Ethical clearance was obtained from the Institutional Review Board of BIRDEM General Hospital. Data analysis was done using SPSS software version 20. Continuous variables were expressed as mean ± SD, and categorical variables as frequency and percentage. The Chi-square test and Student's t-test were applied to assess the significance of association of comorbidities with early postoperative complications, and a p-value of less than 0.05 was considered statistically significant.

**RESULTS**

Table I shows that out of 50 patients with BEP, the highest 26(52%) represented the 61-70 years age group, which was subsequently followed by 13(26%) in the 51-60 years age group. The mean age of the respondents was 68.7±8.1 (age range: 49-88) years. [Table I]

**Table - I: Distribution of patients according to age group (n=50)**

Age group (in years)	Frequency (%)
≤50	2 (4)
51 - 60	13 (26)
61 - 70	26 (52)
71 - 80	3 (6)
>80	6 (12)
Mean age±SD (in years)	68.7±8.1
Age range (in years)	49 - 88

Table II shows that out of 50 patients, the highest 66% were suffering from DM, whereas 54% patients were suffering from associated UTI. 34% and 26% patients had CKD and HTN. [Table II]

**Table - II: Distribution of patients according to co-morbidity (n=50)**

Co-morbidity	Frequency (%)
DM	33 (66)
HTN	13 (26)
Cardiovascular Disease	3 (6)
CVD	2 (4)
CKD	17 (34)
Associated UTI	27 (54)

Table III demonstrates that out of 50 normal patients, 16% suffered from one co morbidities 18%, two co-morbidities 28%, three co-morbidities 36% and one patient suffered from multiple complications. [Table III]

**Table - III: Distribution of combinations of co-morbidities according to patients (n=50)**

Comorbidities	Number of patients
DM+HTN+IHD+CKD+UTI	1
DM+HTN+CKD	12
DM+IHD	2
DM+CKD+UTI	4
DM+CVD+UTI	2
DM+UTI	12
UTI	9
Normal	8
Total number of patients	50

Table IV presents that among 50 patients 94% underwent TURP under SA. The mean operation time was 48.3±29.7 (range: 45-96) minutes. The mean diagnosed weight of the prostate was 54.3±30.7gms g, whereas the mean resected specimen weight was 18.6±9.3gms. On the other hand, the mean PVRU was 103.31±65.1 (range: 100-210) ml. [Table IV]

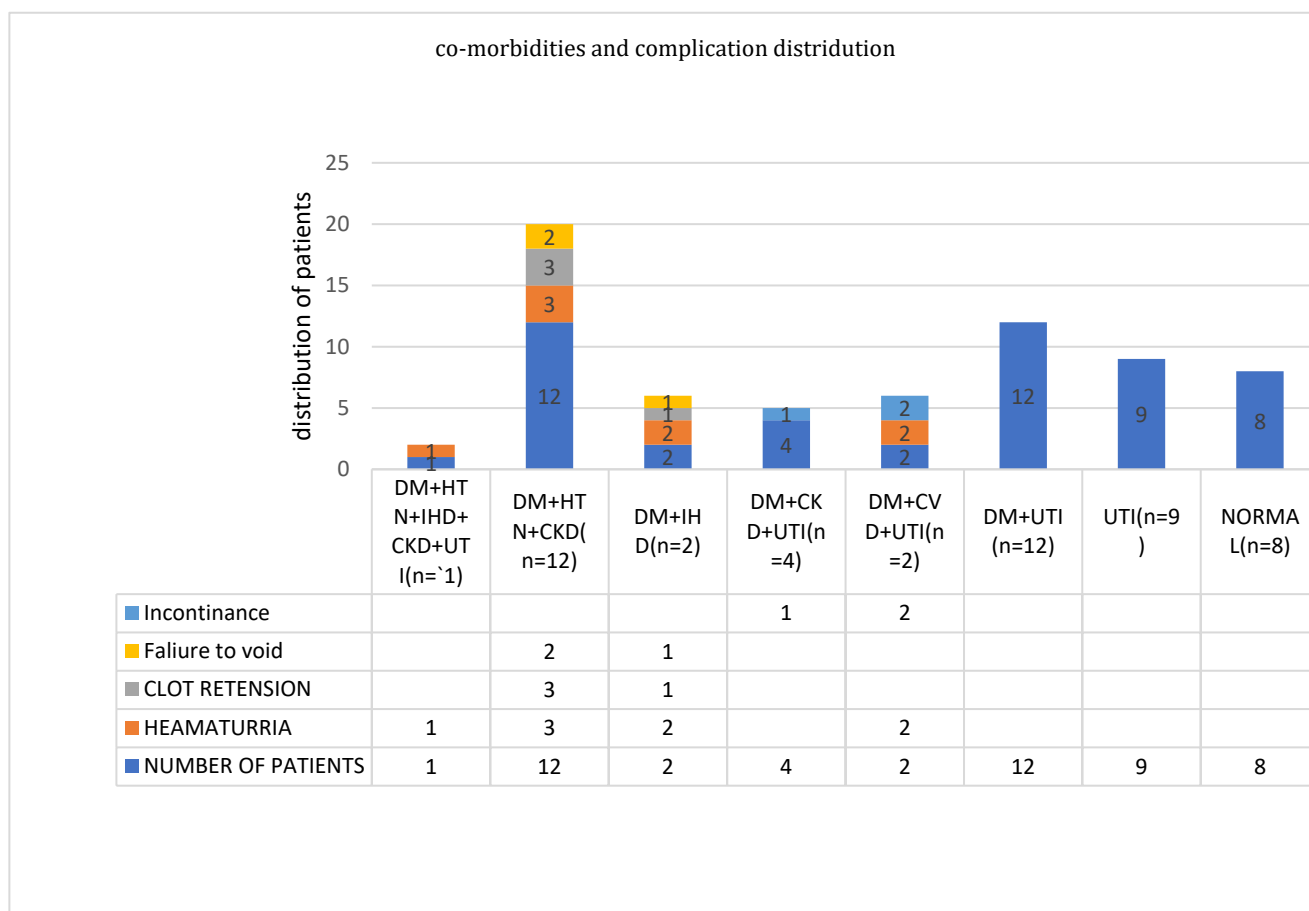
**Table - IV: Distribution of patients according to clinical and surgical profile (n=50)**

Clinical & Surgical Variables	Values
<b>Prostate weight (mean± SD) (gm)</b>	
Diagnosed	54.3±30.7
Resected	18.6±9.3
<b>Type of anaesthesia</b>	
GA	3 (6%)
SA	47 (94%)
Operation time (mean± SD) (min)	48.3±29.7
Range: (min)	45 - 96
PVRU (mean± SD) (mL)	103.31±65.1 (100-210)

Table V shows that haematuria (reactionary and secondary), clot retention, urinary incontinence and failure to void were observed in 16%,8%,6% and 6% patients, respectively. [Table V]

**Table - V: Distribution of patients according to complications (n=50)**

Complications	Frequency (%)
Hematuria (reactionary and secondary)	8 (16)
Clot retention	4 (8)
Urinary incontinence	3 (6)
Failure to void	3 (6)



**Figure - 1: Distribution of patients according to the combination of complications and co-morbidities (n=50)**

Figure 1 displays that only 1 patient experienced hematuria, who is suffering from multiple co-morbidities and hematuria and clot retention and failure to void occurred in 2 patients who were suffering from DM, HTN and CKD out of 12 patients, and one of them suffered hematuria and clot retention only. 2 patients experienced hematuria and incontinence those who had CVD, DM and UTI simultaneously.

**DISCUSSION**

This study evaluated the incidence of early postoperative complications in patients with co-morbidities undergoing transurethral resection of the prostate (TURP). The majority of patients were aged 61–70 years (52%), followed by 51–60 years (26%), with a mean age of 68.7±8.1 years. These findings align with prior studies reporting that TURP patients are predominantly in the seventh decade of life [2,10]. Pre-existing co-morbidities were highly prevalent. Diabetes mellitus was present in 66% of patients, associated with urinary tract infection in 54%, chronic kidney disease in 34%, and hypertension in 26%. Overall, 84% of patients had at least one co-morbidity, with 36% presenting with three or more co-morbidities concurrently. This prevalence is higher than reported in multinational studies, where overall co-morbidity rates ranged from 25–45% [10]. The higher rate in this study is likely due to the single-centre tertiary care setting focused on metabolic and endocrine disorders. Multiple co-morbidities increase the risk of postoperative complications following TURP [6]. Regarding anaesthesia, 94% of patients underwent TURP under spinal anaesthesia and 6% under general anaesthesia. Spinal anaesthesia has been associated with

reduced perioperative blood loss and faster recovery in elderly patients [11]. The mean operation time was 48.3±29.7 minutes, with a mean prostate weight of 54.3±30.7 g and mean resected tissue of 18.6±9.3 g, consistent with contemporary studies [4,5]. Early postoperative complications were observed in 22% of patients, including hematuria (16%), clot retention (8%), urinary incontinence (6%), and failure to void (6%). All complications occurred in patients with pre-existing co-morbidities, while patients without co-morbidities did not develop complications. This emphasises the critical role of baseline health status in early postoperative outcomes [2,10]. Hematuria and clot retention were primarily managed conservatively with bladder irrigation, balloon tamponade, and tranexamic acid. Blood transfusion was required in 4% of patients, consistent with contemporary reports indicating low transfusion rates in TURP [11,13]. Urinary incontinence occurred in 6% of patients and improved with pelvic floor exercises, supporting previous findings that early postoperative incontinence is usually transient [14]. These results indicate that patients with multiple co-morbidities—particularly diabetes, hypertension, chronic kidney disease, and associated urinary tract infections—have a higher risk of early postoperative complications after TURP.

**Limitations of the Study**

This study was limited by its small sample size, single-centre design, short follow-up period, and non-randomised sampling, which may restrict the generalizability of findings and limit the assessment of long-term postoperative outcomes.

**CONCLUSION**

This study found a high incidence of early postoperative complications among patients with comorbidities undergoing TURP. Hematuria, clot retention, urinary incontinence, and failure to void occurred exclusively in patients with comorbidities.

**RECOMMENDATION**

The findings recommend emphasising comorbidity assessment in all TURP patients, as comorbid conditions substantially increase early postoperative complications, underscoring the need to address underlying diseases to reduce morbidity after transurethral resection of the prostate.

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