Jimma University

College of Puplic Health and Medical Science

# Research On Six months prospective study Of Outcome Of Transvesical Prostatectomy Among patients admitted with benign prostatic hyperplasia to JUMC, Department of surgery

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# Research on six months prospective study of outcome of transvesical prostatectomy among patients admitted with benign prostatic hyperplasia to JUMC, Department of surgery .

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# Abstract

**Background:** The treatment of urinary bladder outlet obstruction secondary to BPH is pharmacologic (medical) and surgical. Prostatectomy for patients with BPH is one of the most frequent operations performed in the world (3).TVP may be safely performed in areas with poor socioeconomic condition by adequately trained surgeons who have no sufficient endoscopic equipment. In many parts of our country, patients do not usually admit for treatment until they have acute urinary retention, even though they have had diminishing caliber and strength of the urinary stream for months. So TVP is the only option and this study aim to evaluate how open prostatectomy for benign prostatic hyperplasia (BPH) is an acceptable option with a high degree of safety and efficacy in areas where the TURP equipment is lacking or this operation is technically impossible.

.**Method:** Prospective cross sectional study was used. All patients admitted to surgical ward with the diagnosis of BOO secondary to benign prostatic hyperplasia and undergone transvesical prostatectomy were included. No sampling technique was used. All patients admitted to surgical ward with the diagnosis of BOO secondary to benign prostatic hyperplasia were traced and data were collected from patients record using structured questionnaire by principal investigator and residents. After checking completeness of data, it was analyzed IPSS

**Results**: Among 60 patients admitted to JUMC for TVP during the study period, 4(6.6%) were in the age range of 40-50, 28(46.6%) in the age range 51-60, 19(31.6%) were in the 61-70, 7(11.6%) were in the 71-80 and two(3.3) patients >80.Among 60 patients who were undergone TVP during the study period 53(88.3) patients had complaint of progressive lower urinary tract symptoms, of which the predominant complain were frequency, urgency, dribbling, and nocturia 83.01%, 75.5% and 50.9% in decreasing order. Complaint of poor stream and hesitancy were identified in 17(32.0%) and 15(28.3%) patients respectively. The least complaint was incontinence. Of these 60 patients admitted for the operation during the study period, twenty eight (46.67%) patients had history of acute urinary retention for which they were kept on catheter. Thirteen (21.6%) patients were having chronic urinary retention with deranged renal function of various degree.

**Conclusion**: Many patients presented with bladder outlet obstruction aged $6^{th}$ and $7^{th}$, almost half admitted for transvesical prostatectomy were have had one or more acute urinary retention by the time they presented. The transvesical prostatectomy is the only available and also appropriate management with its acceptable, if correctly identified manageable, immediate and late post operative complication

# Acknowledgements

My first and foremost gratitude goes to my advisor Dr.Lidya Gemechu  for her valuable guidance on research topic selection, proposal development and writing this research.. My gratitude also goes to Jimma University College of public health and Medical science, postgraduate and research coordinating office, for sponsoring this research, and to the department of surgery,JUMC for helping me to conduct this research.

## Abbreviation

BOO: bladder outlet obstruction

BPH: benign prostatic hyperplasia

JUMC: jimma university medical center

TVP: transvesical prostatectomy

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## Operational definition

- **BOO secondary hyperplasia** can be defined as having sign and symptoms like frequency, urgency, incontinence, hesitancy, feeling of incomplete emptying,drippling, intermittency, enlarged prostate, palpable tender suprapubic mass, residual urine >250ml on abdominopelvic U/S
- **Indication for prostatectomy is defined as**
  - ✓ Acute retention
  - ✓ Chronic retention
  - ✓ Severe symptoms with Ipss> 19
  - ✓ Complications(Stone formation, divericula, hydronephrosis, recurrnt infection)
- **Short term outcome after prostatectomy** is defined as symptoms relief and complications of operation within the first 6 weeks after surgery
- **Long term outcome after prostatectomy** is defined as symptoms relief and complications of operation after of surgery
- **Prostatectomy**– This is the surgical removal of hyperplastic prostatic tissue either by transurethral resection or open methods**.**
- **Excessive Hemorrhage -** This is the loss of more than 1.5 litres of blood during surgery and during the immediate postoperative period requiring transfusion of more than two units of blood.
- **Co-morbidities-** This is presence of hypertension, renal impairment, diabetes mellitus or bronchial asthma.
- **Clot retention -** This is failure to void postoperatively due to obstruction by a blood clot.
- **Urinary tract infection**- This is when an aseptically collected sample of urine yields more than 105 organisms when cultured.
- **Pneumonia -** This is infection of lung parenchyma associated with radiological changes**.**
- **Wound sepsis -** This is when there is either purulent discharge from the wound or organisms are isolated from an aseptically obtained culture of fluid from the wound.
- **Pyrexia -** This is the elevation of body temperature above 37.8°C .

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# Background

# 1.1 Introduction

Open prostatectomy (OP) is a "first generation" operation for benign prostate hyperplasia (BPH) and remains a commonly performed procedure by urologists and general surgeons in developing countries [1]. Transurethral resection of the prostate (TURP) on the other hand is termed a "second generation" procedure and is traditionally believed to be the gold standard for the surgical management of BPH worldwide especially if the prostate is relatively small (<60 g) [2]. OP is however still a common procedure in many developing countries especially in Africa partly due to poor availability of endoscopic equipment, scarcity of trained endoscopic personnel and the fact that the relatively larger prostate volumes encountered in Africans compared to Caucasians may not be amenable to TURP [2] [3]. International guidelines on treatment of BPH recommend OP or minimal access techniques like holmium laser enucleation of the prostate (HoLEP) for patients in whom large prostate size limits the use of conventional TURP [4] [5]. However, inadequate equipment and expertise on HoLEP and other novel minimal access techniques that can cater for large prostate volume make OP the only viable option for majority of BPH patients in our environment. When compared with endoscopic treatment, OP is cheaper, more effective [6] and can be used to simultaneously treat complications such as bladder diverticulum and bladder calculi, which are relatively common in most developing countries due to late presentation of patients [2]. With increase in the training and number of urology personnel, provision of more endoscopic equipment and strengthening of health insurance schemes, TURPs and other minimal access treatment options for BPH are expected to sharply increase in the nearest future in/around our domain. It is thus important to conduct studies like this on OP, as it will serve as a traditional reference benchmark to which endoscopic treatment of BPH can be compared. We therefore set out to document the indications and outcomes of OP in our developing economy.

Dihydrotestosterone, the active form of testosterone (through the action of 5-alpha reductase) is responsible for prostatic hyperplasia and 5-alpha reductase inhibitors provide base for medical treatment.

## 1.2 Statement of the problem

Open prostatectomy (OP) is a "first generation" operation for benign prostate hyperplasia (BPH) and remains a commonly performed procedure by urologists and general surgeons in developing countries. Transurethral resection of the prostate (TURP) on the other hand is termed a "second generation" procedure and is traditionally believed to be the gold standard for the surgical management of BPH worldwide especially if the prostate is relatively small (<60 g). OP is however still a common procedure in many developing countries especially in Africa partly due to poor availability of endoscopic equipment, scarcity of trained endoscopic personnel and the

fact that the relatively larger prostate volumes encountered in Africans compared to Caucasians may not be amenable to TURP.

International guidelines on treatment of BPH recommend OP or minimal access techniques like holmium laser enucleation of the prostate (HoLEP) for patients in whom large prostate size limits the use of conventional TURP. However, inadequate equipment and expertise on HoLEP and other novel minimal access techniques that can cater for large prostate volume make OP the only viable option for majority of BPH patients in our environment. When compared with endoscopic treatment, OP is cheaper, more effective [6] and can be used to simultaneously treat complications such as bladder diverticulum and bladder calculi, which are relatively common in most developing countries due to late presentation of patients.

## 1.3 Significance of the study

This study will help for the principals and policy makers to know the burden of the disease and design management plan. Since it is the first research made on on this topic in JUMC, it will help as a baseline data for further researches to be done in the future. The research also helps for JUMC department of surgery to develop management protocol for patients with complication associated to open prostatectomy done for BOO secondary to BPH

# 2.Literature Review

The first complete suprapubic removal of a prostatic adenoma by blind digital enucleation was performed by Eugene Fuller in 1884, the technique carried an high mortality rate (18%) and was opposed by most surgeons [2]. The procedure was then adopted by Peter Freyer, an Irishman born near Clifden who studied medicine at Queen's College in Galway. After taking his degree in 1874, Freyerjoined the Indian Medical Service. In 1896 he returned to England and became part of the surgical staff at St. Peter's Hospital in London where in 1900 he performed his first prostatectomy [1]. Despite a 5% mortality rate, the operation was a great success.The procedure was rapidly popularised and a second series of one thousand patients was published in 1912; the operation remained the gold standard for fifty years [31].

With increase in the training and number of urology personnel, provision of more endoscopic equipment and strengthening of health insurance schemes, TURPs and other minimal access treatment options for BPH are expected to sharply increase in the nearest future in/around our domain. It is thus important to conduct studies like this on OP, as it will serve as a traditional reference benchmark to which endoscopic treatment of BPH can be compared. We therefore set out to document the indications and outcomes of OP in our developing economy.

Open enucleation was used in 93.7% of all the prostatectomies done in Faculty of Clinical Sciences, ObafemiAwolowo University, Ile-Ife**,** Nigeria, in 2016. This is comparable to 90% reported from another university teaching hospital in Nigeria [3] but slightly higher than values of 81% and 79.3% for OP quoted from Kenya [9] and Ghana [10] respectively. Thesepractice, as well as those from most other developing countries is however in stark contrast to documented experience from Europe and America, as OP accounted for only 3% of prostatectomies in the United States of America [11], 12% in Sweden [12] and 14% in France [13]. The difference may be explained by the technological advancement in Europe and America with easier access to endoscopic equipment as well as because Caucasians have relatively smaller prostate volumes easily amenable to TURP [14]. In ObafemiAwolowo University, Ile-Ife, Nigeria; the mean age of the patients was 67 years, similar to findings inprevious report [15] as well as those by other authors [10] [16] [17] and a reflection of the predominant age of BPH occurrence in men. Symptom duration greater than one year in many of the patients (139, 56.3%), and fact that more than two-thirds of them already had complication(s) from the BPH at presentation is a pointer to their poor health seeking behavior possibly secondary to their poor socioeconomic status, since those patients are mostly poor peasant farmers, traders and artisans. Many of our patients also believe in and actively seek after alternate medicine options, and this is an additional strong contributory factor to theirdelay at presentation.

According to EAU update series 4 (2006) Evaluation of clinical outcome of OP, In a landmark study, Meyhoff and coworkers demonstrated in a comparative randomisedstudy that open prostatectomy is well accepted by patients with only 9% of patients were dissatisfied by treatment compared to 15% of the TURP group (Table 1) [39–41]. Tubaro and co-workers

evaluated the 1 year clinical and urodynamic outcome ofpatients treated with suprapubic prostatectomy [36]. Open prostatectomy induces a significant reduction of symptom score and improvement of quality of life index after 1 year of treatment. Of the patients, 84% described themselves as delighted with the results obtained and none had a quality of life scoregreater than 3 with a mean value of 0.2. In their series 60% of patients become asymptomatic after treatment and 96.9% had a flow rate greater than 15 ml/sec. A significant improvement of voiding volume, post void residual volume and bladder wall thickness was also observed (Table 2).

Varkarakis and co-workers have recently confirmed the above data[37]. They retrospectively evaluated 151 patients who underwent open transvesical prostatectomy for BPH (prostate larger than 70 grams) during a five year period. The improvement at 8 to 12 months, as documented by an increase in Qmax, decrease in PVR urine volume, and decrease in lower urinary tract symptoms and quality of life improvement,was statistically significant after the procedure and did not change significantly even after longer follow up (41.8 months).

According to EAU update series 4 (2006) Evaluation of clinical outcome of OP, one of the main disadvantages of open prostatectomy is the high rate of morbidity which is generally higher than reported for transurethral surgery. Nowadays, better patientsselection, better anaesthesia techniques, change intransfusion policies, and improvement of surgical standards may be responsible for the observed decrease in complication rates. The overall rate of morbidity and mortality associated with open prostatectomy is considered to be lower thanreported in the early seventies. Intraoperative and peri-operative haemorrhage still is associated with open prostatectomy and transfusion rate is still a major concern. In the series evaluated by Tubaroand co-workers an autologous blood unit was transfuse in the 68% of patients evaluated. Other reports showed a 11.2% of severe bleeding who necessitate of blood transfusion in 73% of patients[42]. Considering an overall 23% transfusion rate after this procedure (AUA guidelines), it may still beprudent to have 1 to 2 units of autologous blood available at the time of open prostatectomy. Wound complication or urinary fistula can also be of concern in the immediate postoperative period in the 0.4–4% of patients [42,37]; this most likely resultsfrom an incomplete closure the cystotomyinsuprapubic prostatectomy [42,37]. This complicationwill usually resolve spontaneously and is managed with continued catheter drainage.

Hospital stay is usually longer with open procedures with a mean hospitalisation ranging from 6 to 10 days in the modern series and it is due to a median of 5 day of catheterisation time [36,37,42].Urinary tract infection is a rare complication (6–8%) thanks to the modern antibiotic prophylactics and is comparable to that observed after TURP [4]. Urinary incontinence is a rare event after open prostatectomy and should be minimised by a precise enucleation of the prostatic adenoma with a minimal risk of injury to the external sphincter. Late urologic complications are not common and include bladder neck contractures (BNC) and urethral strictures with an incidence comparable toTURP(2–20%). Erectile dysfunction occurs in 3% to 5% of patients undergoing an open prostatectomy; it is more common in older men than in younger men. Retrograde ejaculation is another common complications after open procedures and is observed in 80% to 90% of patients. Deep vein thrombosis, pulmonary embolus, myocardial infarction, and a cerebral vascular event are observed in less than 1% of open prostatectomy with an overall

mortality rate which approach zero [4,5]. Failure rate is also extremely low and is estimated between 0 to 8% [4].

In study that was done at Kamkar Hospital, Qom University of Medical Sciences, from April 2003 to December 2008includedatotalof 202 patients underwent open prostatectomy using the modified approach. Indications of admission in this group was a high IPSS in spite of medical therapy in 106 patients(52.5%) with a mean IPSS of 19.5, recurrent acute urinary retention in 35 (17.3%), bladder calculus in 28 (13.8%), recurrent UTI in 17 (8.4%), and bilateral hydroureteronephrosis in 16 (8.0%). The mean intra-operative blood loss, estimated by measuring of collected blood in the suction bottle and blood quantity of sponge gauzes, was 120 mL.Continuous isotonic saline irrigation performed for the first 24 hours, and thereafter if needed. No Foley traction insertion was needed during hospital stay. In 5 patients (2.4%) clot retention episodes were detected 4 to 12 hours after the operation, all of which were treated with forceful irrigation and evacuation of clots. Cystoscopicmanagement of continuous bleeding or open re-exploration was not needed in any of the cases. The mean duration of hospital stay was 3 days (range, 2 to 4 days)

In the above study, Hemoglobin level at discharge was 1.8 g/dL on average lower than that at admission. Complete blood count was checked 6 hours after the surgery, and then daily, in addition to serum creatinine. In 29 patients (14.3%), serum hemoglobin was lower than 10 g/dL during hospital stay, and transfusion of packed cell was done (2 units in 21 and 3 units in 8). The Foley catheter was removed on the 5th to 6th day after the operation (median 5 days; range, 5 to 8 days). In 3 patients (1.4%), recatheterization was needed for another 3 to 5 days due to retention or rebleeding.

The study also showed, pathology report in all of the patients was in favor of BPH, except 6 patients that were found to have incidental prostate adenocarcinoma. In 1 patient, persistent vesicocutaneous fistula was detected 2 weeks after removal of the Foley catheter. This patient was recatheterized, and fistula was cured after 2 weeks. Postoperative epididymoorchitis was noted in 8 patients (3.9%), 1 to 3 weeks after the operation, all of which were treated by appropriate oral antibiotics. Bladder neck contracture was detected in 1 patient (0.4%) after 3 months. Retrograde ejaculation occurred in 160 patients (72.9%). The mean residual urine volume decreased from 126 mL pre-operatively to 10 mL 3 months after the operation.

Significant decrease in the IPSS occurred after the operation (the mean IPSS decreased from 19.5 to 1.5, after 3 months). Of the 202 patients, 174 (86.1%) were visited at the end of the 1st year after the operation and 102 (50.5%) were visited at the 2nd year. No new situations like regrowth of the prostate tissue, urethral stricture, or bladder neck contracture was noted. One death due to urosepsis occurred 3 months after the operation.

Luttwak and coworkers studied the results of open prostatectomy on the 98 men. The mean operative time was 62 minutes, and 56.6% of the patients received 1 to 4 units of packed cell. Bladder neck constriction and urethral strictures occurred in 4.1% and 3% of cases, respectively.(11) The rate of our blood transfusion was 14.3%, bladder neck contracture was 0.4%, and no urethral stricture was noted. The total complication rate in Tubaro and associates'

study on the 32 patients was 31.3%.(12) This rate in our study was 6.4%. In the study of Takle and coworkers on 66 patients,(13) the mean operative time was 88 minutes, blood loss during the operation was 917 mL, 50% of the pateints needed blood transfusion during hospital stay, and 9% needed surgical re-intervention during the first 30 days. The time to removal of the postoperative catheter was 7.2 days and postoperative hospital stay lasted for 8.4 days. Whereas, median hospital stay of our patients was 3 days and catheterization time was 5 days( Urology Journal Vol 7 No 1 Winter 2010, p54).

Wound infection was the most common complication (35%) following open prostatectomy in Kiptoon and colleague's study.(14) Zargooshireported a transfusion rate of 3.3% in 3000 cases, and the acute myocardial infection rate was 0.5%. Long-term complications including bladder neck contraction, urethral stricture, and meatal stenosis, occurred in 5.2% of cases were reported by another team. Urethral complications rate of our series was 0.4%. The most common reported nonurologic adverse effects included deep vein thrombosis, pulmonary embolus, myocardial infarction, and a cerebral vascular event. The incidence of any one of these complications is less than 1%. They did not have any of these complications. For reducing bleeding, some other methods are used such as bladder neck hemostasis at 5 o'clock and 7 o'clock positions or using some local vasoconstrictors like ornithine-8 vasopressin. They believe that our method requires further case-control studies and it should be applied in a larger population to be evaluated more comprehensively(Urology Journal Vol 7 No 1 Winter 2010, p54).

At Kenyatta National Hospital total of 85 patients participated in the study, of whom69 (81.8%) underwent open prostatectomy. The type of surgery was chosen by the surgeons, and the small proportion of patients undergoing TURP in this study could be due to the fact that patients in this centrepresented with large prostate sizes not suitable for transurethral resection.The mean age of patients undergoing prostatectomy was 66.71 years (range 46-85 years) with a peak age group of 61-70 years. Ten patients (12 %) had intra-operative haemorrhage requiring transfusion of more than two units of blood. A total of 9 patients (13 %) who had open surgery had intra-operative haemorrhagerequiring transfusion of more than two units of blood. This figure is much lower than rates reported by earlier studies from Africa: 31 % reported by Ahmed11 and 20 % reported by Ibrahim et al. However the 13 % transfusion rate is similar to those reported by a majority of contemporary studies.31, 47, 48, 49

# 3. Objectives

## 3.1 General Objective

- To assess of the results of trans-vesical prostatectomy regarding short and long term complications, andways to bring down complications and manage when they occur.

## 3.2 Specific Objectives

- ✓ To assess the common short term complication associated with transvesical prostatectomy
- ✓ To assess the common long term complication associated with transvesical prostatectomy
- ✓ To describe measures to be taken to reduceshort and long term complication
- ✓ To describe management of some of the complication using the available resources

# 4. Method and Material

## 4.1 Study area and study period

The study was conducted in JUMC. JUMC is found in Jimma town , which is located 350 km southwest of Addis Ababa. Currently it is the only teaching and referral hospital in south western part of the country. It provides specialized health services through its nine medical and other clinical and diagnostic departments for approximately 9,000 inpatients and 80,000 outpatients each year with bed capacity of 600 including hotel standard single bed rooms

## 4.2 Study design

Prospective cross sectional study design was used

## 4.3 Population

### 4.3.1 Source population

All Patients  who were admitted to JUMC with diagnosis of BOO secondary to BPH during study period, April, 2018 to Aug. 2018

### 4.3.2 Study population

All Patients  who were admitted to JUMC with diagnosis of BOO secondary to BPH during study period, April, 2018 to Aug, 2018

## 4.3.3 Inclusion

All patients admitted to JUMC surgical ward with the diagnosis of Boo secondary to BPH who are operated on (transvesical prostatectomy) from (period of study) who were willing to give consent.

## 4.3.4 Exclusion criteria

Patient admitted to JUMC surgical ward with the diagnosis of Boo secondary to BPH who were unwilling to give consent

## 4.4.5 Sample size and Sampling techniques

No sampling technique was used. All Patients admitted with the diagnosis of BOO secondary to BPH during the study period who give consent was included

## 4.4 Study variables

## Dependent variables

- Acute retention
- Prostatism
- Chronic retention

## Independent variables

- Age
- Sex
- Address

## 4.5 Data collection instrument and methods

All Patients who were admitted to JUMC with diagnosis of BOO secondary to BPH during study period, who were undergone Transvesical prostatectomy was traced and data was collected from the patients, and their medical records was collected using structured questionnaire by principal Investigator and residents.

## 4.6 Data quality control

The data collection instrument was pretested on Patients who were admitted to JUMC with diagnosis of BOO secondary to BPH ,who were undergone Transvesical prostatectomy prior to actual data collection to check missed information so as to make possible amendments. Selection and training of data collector has been done. Checking for completeness and consistency of collected data at the end of each day has been done throughout data collection period.

## 4.7 Data processing and analysis

After checking the completeness of data, it was analyzed using SPSS. Finally the data was presented in tables and graphs as necessary and cross tabulation with statistical test for association

## 4.8 Ethical consideration

Prior to data collection a formal letter of permission was collected from JU, department of surgery and forwarded to JUMC administrative office to get permission for the study. Purpose and procedure of study was explained to JUMC administrative office and other concerned body to avoid ambiguity. Patient's records were kept confidential

## 4.9 Limitation of the study

The absence of similar research before in JUMC and even at national level.The small sample size and short study period made it difficult to see the significance of some of the statistics and as a cross sectional study: cause and effect could not be established

## 4.10 Dissemination of the result

After analyzing data, conclusion and recommendation will be made and the result will be submitted to Jimma university department of surgery, college of puplic health and medical science

# RESULT

**Among 60 patients admitted to JUMC for TVP during the study period, 4(6.6%) were in the age range of 40-50, 28(46.6%) in the age range 51-60, 19(31.6%) were in the 61-70, 7(11.6%) were in the 71-80 and two(3.3) patients >80.(Table 1)**

**Among 60 patients who were undergone TVP during the study period 53(88.3) patients had complaint of progressive lower urinary tract symptoms, of which the predominant complain were frequency, urgency, dribbling, and nocturia 83.01%, 75.5% and 50.9% in decreasing order. Complaint of poor stream and hesitancy were identified in 17(32.0%) and 15(28.3%) patients respectively. The least complaint was incontinence (Table 2)**

**Of these 60 patients admitted for the operation during the study period, twenty eight (46.67%) patients had history of acute urinary retention for which they were kept on catheter. Thirteen (21.6%) patients were having chronic urinary retention with deranged renal function of various degree.**

**Among those 60 patients involved in the study 21(35%) patients were having co-morbidities. Of the co-morbid illness fourteen (66.6%) patients diagnosed to hypertension of various stages. Ten (71.4%) of the patients with hypertension were on medication and follow up. The other four (29.6%) patients were newly diagnosed hypertensive patients. The other three (14.2%) patients were diagnosed to have retroviral infection on management. Two (9.5%) patient were having type two diabetes mellitus. One patient with controlled bronchial asthma and one with controlled toxic multi nodular goitre.(Table 5)**

**From the 60 patients operated for benign prostatic hyperplasia with trans vesical prostatectomy, nine (15%) patients developed intra operative complication; the major of which of excessive bleeding seven (77.7%) patients), two (23.3%) patients had inadvertent peritoneal tear. Of those patients with excessive bleeding, three were transfused and the other four patients didn't need transfusion and send home with iron supplementation. For the patients with peritoneal tear, the tear were identified intra operatively and repaired.(Table 3,4)**

**Five (8.3%) patients developed immediate postoperative complication. The most common immediate postoperative complication was wound infection 2**

**(40%)patients, one patient had clot retention(20%) for which bladder was re-opened, one(20%) with suprapubic urine leak which was subsided after followed conservatively and the left (20%)patient had pneumonia which was treated with antibiotics and chest physiotherapy.**

**Of the sixty patients treated for whom the procedure (e.i trans vesical prostatectomy was done), seven (11.67%) patients developed long term complication. Of the complications five (71.4%) patients developed incontinence and are being managed conservatively. And two (29.6%) patients were diagnosed to have bladder neck contracture manifested with lower urinary tract symptoms. Most of the complications were documented on those older than sixty and with co-morbidities those patient operated with transvesical prostatectomy involved in the study, no death was recorded. (Table 6)**

**Table 1:- Age classes vs. Symptoms of Boo secondary to BPH**

| Age classes(years) | No of patients with symptoms of BOO 2ry to BPH | % |
|---|---|---|
| 40-50 | 4 | 6.6 |
| 51-60 | 28 | 46.6 |
| 61-70 | 19 | 31.7 |
| 71-80 | 7 | 11.6 |
| >80 | 2 | 3.3 |
| Total | 60 | 100 |

**Table 2:- Patients presented with LUTS, Acute urinary retention or both by age**

| | Age classes | 41-50 | 51-60 | 61-70 | 71-80 | ≥81 |
|---|---|---|---|---|---|---|
| | | | | | | |
| Progressive symptom only | | 4 | 10 | 11 | 5 | 2 |
| Acute retention | | 0 | 0 | 0 | 1 | 0 |
| Symptoms with retention | | 0 | 18 | 8 | 1 | 0 |
| Total | | 4 | 28 | 19 | 7 | 2 |
| | | | | | | |

**Table 3:- Overall postoperative complication**

| Complication | No | % |
|---|---|---|
| Clot retention | 1 | 8.3 |
| Wound infection | 2 | 16.8 |
| Pneumonia | 1 | 8.3 |
| Urinary leak | 1 | 8.3 |
| Bladder neck contracture | 2 | 16.6 |
| Impotence | 0 | 0 |
| Retrograde ejaculation | 0 | 0 |
| Incontinence | 5 | 41.6 |
| Stricture | 0 | 0 |
| Total | 12 | 100 |

**Table 4:- Postoperative complications by age**

| Age classes<br>Complication | 41-50 | 51-60 | 61-70 | 71-80 | ≥81 |
|---|---|---|---|---|---|
| Clot retention | 0 | 0 | 1 | 0 | 0 |
| Wound infection | 0 | 0 | 1 | 1 | 0 |
| Urinary leak | 1 | 0 | 0 | 0 | 0 |
| Bladder neck contracture | 0 | 1 | 0 | 1 | 0 |
| Incontinence | 1 | 1 | 2 | 1 | 0 |
| Pneumonia | 0 | 0 | 0 | 1 | 0 |
| Total | 2 | 2 | 4 | 4 | 0 |

**Table :-5. Co-morbid conditions by age classes**

| Co-morbid conditions | Age classes | 41-50 | 51-60 | 61-70 | 71-80 | ≥81 | Total |
|---|---|---|---|---|---|---|---|
| | | | | | | | |
| Hypertension | | 2 | 2 | 5 | 4 | 1 | 14 |
| DM | | 0 | 0 | 1 | 1 | 0 | 1 |
| RVI | | 1 | 2 | 0 | 0 | 0 | 3 |
| Others | | 0 | 1 | 1 | 0 | 0 | 3 |
| Total | | 3 | 5 | 7 | 5 | 1 | 21 |

**Table:- 6. Postoperative complications of patients with co-morbidities**

| co-morbidities | Postop complication | | | | | |
|---|---|---|---|---|---|---|
| | Wound infection | Pneomonia | Clot retention | Impotence | Incontinence | Total |
| Hypertension | 1 | 1 | 1 | 0 | 2 | 5 |
| RVI | 0 | 0 | 0 | 0 | 1 | 1 |
| Dm | 1 | 0 | 0 | 0 | 1 | 2 |

| co-morbidities | Postop complication | | | | | |
|---|---|---|---|---|---|---|
| Others | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 2 | 1 | 1 | 0 | 4 | 8 |

# Discussion

Concerning the age at presentation with complaint of lower urinary tract symptom of BOO secondary to BPH, it almost similar according to different study both in developed and developing country that , those patients, nearly all of them presented after the age of 50years.with the median age of presentation were in the sixth and seventh decade of life as the study in different developed and African countries showed. With the study in Africa and Asia showing their presentation more late in sixties which is almost similar with my studies.

In study done in different centers in Asia and Africa, like kamkar hospital, qom university; kenyatta university hospital, 50%-60% of the patients were presented progressed severity of their lower urinary tract symptom, 15-20% with recurrent acute urinary retention and the remaining were with recurrent UTI10-14%, and complication like bladder stone and hydronephrosis. In this study at JUMC, 53.3% patients presented with progressively worsened symptoms of which 21% had already hydronephrosis and variable degrees of renal function derangement; and 46% of them had history of acute retention for which they were put on catheter showing slight delay in presentation in our patients.

In different studies of developing countries where the study on open prostatectomy done the intra operative complication related to surgery were more common blood loss needing 2 or packed RBC reaching upto 10-12% and death due to the surgery per se also negligible. In this study of JUMC intra operative record excessive blood loss that needed blood transfusion were 5% and peritoneal tear were 3.3% probably this of our cases were by general surgeon and resident as opposed to many centers of those study where the cases were managed urologists.

Concerning the immediate postoperative complication many different studies where this this trans vesical prostatectomy has been done showed wound infection is the most common similar to that of our study and clot retention and Urinary tract infection is a rare complication being the which needed endoscopic evacuation which is almost comparable to this study; and hospital stay and duration before catheter removal were almost comparable.

The long term complication like urinary incontinence comparasble with diferrent studies from Asia and Africa like Nigeria and Kenya showed rare , bladder neck contracture 2-5% percent, urethral stricture 2-3% and impotence and retrograde ejaculation commonly seen which makes the outcome in our setting better. International guidelines on treatment of BPH recommend OP or minimal access techniques like holmium laser enucleation of the prostate (HoLEP) for patients in whom large prostate size limits the use of conventional TURP [4] [5]. However, because of the lack of this minimal invasive procedure and other novel minimal access techniques that can cater for large prostate volume of late presenting majority of BPH patients in our environment. The immediate and late complication of transvesical prostatectomy is not worrisome for our patients.

# Conclusion

Many patients presented with bladder outlet obstruction aged 6th and 7th, almost half admitted for transvesical prostatectomy were have had one or more acute urinary retention by the time they presented. The transvesical prostatectomy is the only available and also appropriate management with its acceptable, if correctly identified manageable, immediate and late post operative complication

# **Recommendation**

*Increasing the community about LUTS, so that they visit health facility before the develop acute and chronic urinary retention with resultant renal function derangement*

*Further prospective research that involved many patients is  important before concluding this procedure safe in all aspect*

*It is paramount important to remind the university hospital administration to try their best in advancing the hospital theatre to have alternative minimal invasive techniques and expertise, to manage this increasing problem with increasing life expectancy*

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