www.jmscr.igmpublication.org
Impact Factor 5.84
Index Copernicus Value: 83.27
ISSN (e)-2347-176x ISSN (p) 2455-0450
crossref DOI: https://dx.doi.org/10.18535/jmscr/v5i4.43

IGM Publication
Journal Of Medical Science And Clinical Research
An Official Publication Of IGM Publication

Effectiveness of Tamsulosin in Prevention of Postoperative Urinary Retention in Female Patients Undergoing Laparoscopic Cholecystectomy under General Anaesthesia

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Abstract

Postoperative urinary retention is one of the most common complications of anesthesia and surgery. It occurs more frequently after lower abdominal and pelvic, gynecologic and anorectal surgeries. Management of Postoperative urinary retention is fairly straightforward. The goal is to decompress the bladder to avoid long-term damage to bladder integrity and function. Immediate catheterization is always the first step. Although placement of an indwelling foley catheter is easier, there are several drawbacks to prolonged use of this method. It seems that prevention is better than treatment.

Method and Material- *A hospital-based prospective study was carried out in 120 female patients, were divided in two groups, 60 patients in each group, which were presented in department of General Surgery, Mata Chanan Devi hospital, New Delhi, during the time period of 2014-2015. It is a 210 bedded, tertiary care hospital in west Delhi, where the patients travel from all northern India.*

Result- *The 60 women of Non Tamsulosin group had mean age of 42.28± 8.88 years with the minimum age of 24 years and maximum of 65 years. The 60 patients of Tamsulosin group had mean age of 43.9± 8.73 years with the minimum age of 30 years and maximum of 58 years. The mean duration of procedure in non tamsulosin group was 49.0±18.43 min; with minimum duration was 25 min and maximum duration was 85 min. The mean duration of procedure in tamsulosin group was 48.33± 16.41 min; with minimum duration was 25 min and maximum duration was 85 min. The mean value of fluid during procedure in non tamsulosin group was 488.33 ± 236.57 ml, with minimum value was 100 ml and maximum was 1000 ml. The mean value of fluid during procedure in tamsulosin group was 551.5 ± 241.54 ml, with minimum value was 120 ml and maximum was 1000 ml. Post voiding residual volume was calculated by ultrasonography. The mean value of post voiding residual volume in our study in non tamsulosine group was 151.5 ± 125.71 ml. and median 120 ml with minimum 30 ml and maximum 600 ml. The mean value of post voiding residual volume in our study in tamsulosine group was 67.17 ± 25.32 ml. and median 60 ml with minimum 30 ml and maximum 150 ml. Postoperatively out of the 60 enrolled patients who received tamsulosin, none of the patients developed urinary retention after procedure and out of 60 patients in non tamsulosin group, 8 patients were developed urinary retention after procedure. P value is 0.006 which is statistically significant. It implies that use of tamsulosin prevent the urinary retention. Out of 60 patients of non tamsulosin group 18 patients required intervention for urination. 10 patients urinate after encouragement and hot water bottle application, 8 patients required foley's catheterization. Out of 60 patients of tamsulosin group 2 patients required intervention for urination. Both 2 patients urinate after hot water application, none of them required foley's catheterization. P*

value is 0.0001, which is statistically significant. Of the 60 enrolled patients who received tamsulosin, 4 (6.67%) patients developed side effects after drug intake and out of 60 patients in non tamsulosin group, 0 patients were developed side effects after drug intake. P value is 0.119 which is statistically nonsignificant. In univariate with one unit increase in fluid during procedure, Risk of retention significantly increases by 4%. In univariate with one unit increase in duration of procedure, Risk of retention significantly increases by 12.3%. In univariate with one year increase in age, Risk of retention significantly increases by 12.9% . After adjusting for confounding variables, only duration of procedure significantly affect risk of retention by 12%.

Conclusion- *In our study, tamsulosin significantly prevent the postoperative urinary retention. Side effect of Tamsulosin was statistically insignificant. In our study postoperative urinary retention depend upon duration of surgery, amount of fluid during procedure and age of patients.*

Recommendations- *Tamsulosin can be used to prevent postoperative urinary retention. It prevent postoperative urinary retention and intervention for that, so prevent catheter related complications. If clinical presentation suggests long duration of surgery and excess amount of intraoperative fluid tamsulosin help in preventing postoperative urinary retention.*

Introduction

Post-operative urinary retention (POUR) is defined as the inability to void after surgery, in spite of adequate encouragement and mobilization, when the bladder is full.[1,2]

Bladder catheterization is a common procedure during inpatient major surgery that allows monitoring of urine output, guides volume resuscitation, and serves as a surrogate marker of hemodynamic stability. With an increase in outpatient and fast-track surgical procedures, perurethral catheterization is restricted to fewer procedures and for a limited time. Awareness and identification of patients at risk of developing postoperative urinary retention (POUR) thus assumes greater significance.

Post-operative urinary retention has been shown to increase with age, with the risk increasing by 2.4 times in patients over 50 yrs. age.[3]

A higher incident of post-operative urinary retention has been reported in men(4.7%) compared to women.[3]

Post-operative urinary retention incidence varies according to the type of surgery . Although the incidence in general surgical population is around 3.8%[3] ,the incident in anorectal surgery range between 1 and 52% , in hernia repair the incident between 5.9% and 38%.[4]

Typically, post-operative urinary retention is a painful co-morbid condition, which increases hospital stay, treatment cost, poor quality of life , kidney damage, long term bladder dysfunction.

Until recently, the management of post-operative urinary retention has been limited to simple insertion of urinary catheter - transurethral , suprapubic, intermitted , which is associated with infection and/or urethral discomfort.

Therefore pharmacological therapy is considered as an interesting approach for patients developing post-operative urinary retention.[2]

It seems that high sympathetic activity increases the risk of post-operative urinary retention.[1] Therefore inhibition of alpha-adrenergic receptors located on the bladder neck and proximal urethra may prevent post-operative urinary retention.[1,5]

Several drugs including alpha-blockers and parasympathi comimetics have been under investigation for their effectiveness in preventing post-operative urinary retention[6]. Recent evidence has shown that the use of alpha-blockers facilitate voiding by decreasing the resistance of the proximal urethra and bladder neck and improving the urine flow[5,7].

Tamsulosin is a safe selective alpha 1 adrenergic receptor blocker characterized by its few side effects[8].

Objective

Primary Objective – Aim of this study to establish the effectiveness of tamsulosin in prevention of

postoperative urinary retention in post laparoscopic cholecystectomy female patients.

Secondary Objective- To prevent postoperative urinary retention

Material and Method

Study Area; The study was conducted in the Department of General Surgery, Mata Chanan Devi Hospital New Delhi.

Study Population;

Inclusion Criteria

1. Female patients admitted for laparoscopic cholecystectomy

Exclusion Criteria

1. IV fluid more than 1500 ml during surgery
2. Surgery time >90 min
3. Known history of neurological disease
4. Diabetes mellitus
5. patients on benzodiazepines, cholinergic drugs, alpha or beta agonist
6. Patient unwilling or unable to give consent
7. Significant renal disease (serum creatinine 120 m mol/ml) and/or hepatic disease.
8. Confirmed or suspected urethral stricture
9. Allergy to tamsulosine
10. Use of spinal anaesthesia

Study Size; Sample Size was determined based on the ability to detect the proportion of patients with post operatively urinary retention. We chose a 30% baseline ratio of proportion of POUR in Non Tamsulosin Group. Sample size of 60 patients in each group, there was 80% power at an alpha 0.05 to detect a 20% difference of proportion of patients with POUR between Tamsulosin group and Non Tamsulosin group.

Formula

The formula for calculated sample size is given below

$$n = \frac{[z1\text{-}\alpha/2.\sqrt{2P(1-P)} + z1\text{-}\beta.\sqrt{\{P1(1-P1) + P2(1-P2)\}}]2}{(P1-P2)2}$$

Where

P1 = Anticipated proportion of POUR in Non Tamsulosin Group

P2 = Anticipated proportion of POUR in Tamsulosin Group

. P = (P1+P2)/2

Study Design: This was a prospective randomized single blind study.

Study Duration: This study was conducted between august 2014 to august 2015 ,

Study Intervention; In this study all patients was managed with Tamsulosin or without Tamsulosin for prevention of post-operative urinary retention .

Half-life of Tamsulosin is 5-10 hours so three doses with 12 hours intervals was give . Tamsulosin was administered 14 and 2 hours before and 10 hours after surgical intervention. All patients was ask for empty their bladder before surgery. NSAIDS was prescribe for post-operative pain.

Written inform consent was obtained in all patients after explaining the effectiveness and side effects of treatment.

Methods of Measurement of Outcome of Interest: Two methods have been used for diagnosis of post-operative urinary retention

1- History and clinical examination- pain and discomfort in lower part of abdomen . clinical assessment by palpation and percussion in the suprapubic area and unable to void during first 24 hours after surgery.

2- Perform a post void bladder ultra-sonography after an optimal voiding. If the post void residual urine (PVR) is below 200 ml, no more bladder ultra-sonography is needed. >200 ml of post void residual urine is diagnosing as post-operative urinary retention.

Data Collection Method

Upon admission data including sex and type of surgery will collect from patient file.

Perioperative fluid and operative time will collect from operative note of all patient .

The present study was conducted in the department of General Surgery, Mata Channan Devi Hospital, Janakpuri. The study was conducted for a period of 12 months from August 2014 to August 2015. After the approval for study by institutional Ethics Committee, a written

informed consent was taken from the patients after explaining the purpose of the study.

All female patients coming to emergency and outpatient department of General Surgery, Mata Channan Devi Hospital and diagnosed to have cholelithiasis and fulfilling the inclusion criteria were included in this study.

Of the total 156 female patients with cholelithiasis that reported during the study period 28 patients excluded from the study because they refused to give consent.

128 patients who fulfilling the inclusion criteria were thus enrolled in the study. During the study period 8 patients were excluded from the study because laparoscopic procedure abandon and converted to open cholecystectomy.

120 patients who were included in the study, were divided in two groups, 60 patients in each group, the decision of allocating the patients in these groups was through computer generated random numbers.

Baseline Characteristics of the Study Subjects

The 120 women included in our study who underwent laparoscopic cholecystectomy were divided into two groups. The 60 women of Non Tamsulosin group had mean age of 42.28± 8.88 years with the minimum age of 24 years and maximum of 65 years. The 60 patients of Tamsulosin group had mean age of 43.9± 8.73 years with the minimum age of 30 years and maximum of 58 years. The two groups were statistically similar on the basis of age (P= 0.272). Table 1

Table 1 Age Distribution in Non Tamsulosin and Tamsulosin Group

	Non Tamsulosin	Tamsulosin	P value
AGE			0.272
Sample size	60	60	
Mean ± Stdev	42.28 ± 8.88	43.9 ± 8.73	
Median	40	44.5	
Min-Max	24-65	30-58	
Inter quartile Range	35 - 49	35 - 51	

Diagrame Showing Age Distribution in Non Tamsulosin and Tamsulosin Group

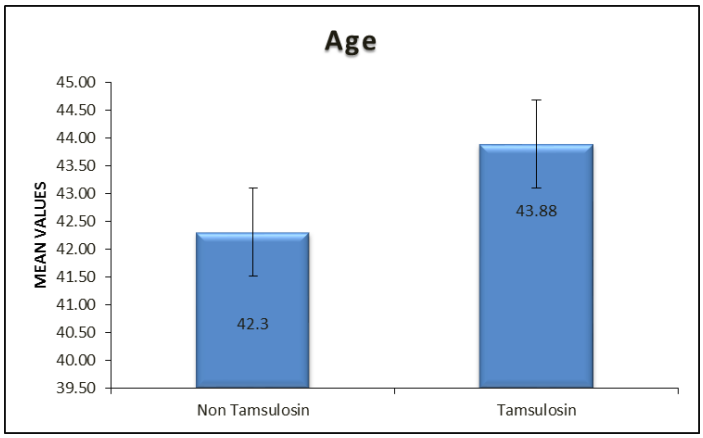

Figure- 1

Past Medical History: There was no significant difference between two groups with respect of past medical history (p= 0.141). Table 2

Table 2: Past Medical History in Non Tamsulosin and Tamsulosin Group

		GROUP		Total	P value
		Non Tamsulosin	Tamsulosin		
Past medical history	NONE	30 (50.00%)	22 (36.67%)	52 (43.33%)	0.141
	Yes	30 (50.00%)	38 (63.33%)	68 (56.67%)	
Total		60 (100.00%)	60 (100.00%)	120 (100.00%)	

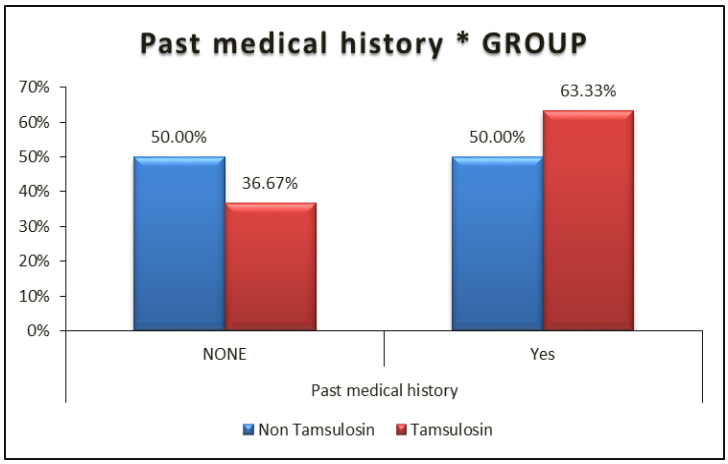

Figure- 2

Past Surgical History: There was no significant difference between two groups with respect of past surgical history (p= 0.463). Table 3

Table 3 Past Surgical History in Non Tamsulosin and Tamsulosin Group

		GROUP			
		Non Tamsulosin	Tamsulosin	Total	P value
Past surgical H/O	NONE	29 (48.33%)	25 (41.67%)	54 (45.00%)	
	Yes	31 (51.67%)	35 (58.33%)	66 (55.00%)	0.463
Total		60 (100.00%)	60 (100.00%)	120 (100.00%)	

Diagrame Showing past Surgical History in Non Tamsulosin and Tamsulosin Group

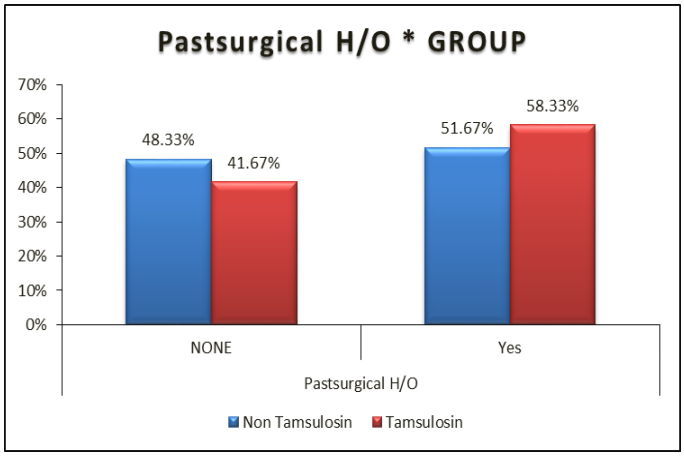

Figure- 3

Duration of Procedure: The Mean duration of procedure in non tamsulosin group was 49.0±18.43 min; with minimum duration was 25 min and maximum duration was 85 min. The mean duration of procedure in tamsulosin group was 48.33± 16.41 min; with minimum duration was 25 min and maximum duration was 85 min. There was no statistically difference between two groups with respect to duration of procedure (p=0.796).Table 4

Table 4: Duration of Procedure in Non Tamsulosin and Tamsulosin Group

Duration of procedure	nontamsulosin	Tamsulosin	
Sample size	60	60	
Mean ± Stdev	49 ± 18.43	48.33 ± 16.41	0.796
Median	40	45	
Min-Max	25-85	25-85	
Inter quartile Range	35 - 60	35 – 60	

Diagrame Showing Duration of Procedure in Non Tamsulosin and Tamsulosin Group

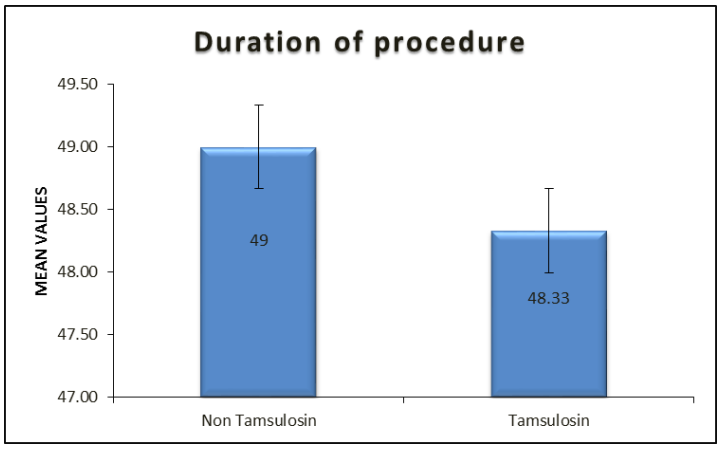

Figure- 4

Fluid During Procedure: The mean value of fluid during procedure in non tamsulosin group was 488.33 ± 236.57 ml, with minimum value was 100 ml and maximum was 1000 ml. The mean value of fluid during procedure in tamsulosin group was 551.5 ± 241.54 ml, with minimum value was 120 ml and maximum was 1000 ml. There was no statistically difference between two groups with respect to fluid during procedure (p=0.106).Table 5

Table 5 Fluid during Procedure in Non Tamsulosin and Tamsulosin Group

Fluid during procedure	Non tamsulosin	Tamsulosin	
Sample size	60	60	
Mean ± Stdev	488.33 ± 236.57	551.5 ± 241.54	0.106
Median	500	500	
Min-Max	100-1000	120-1000	
Inter quartile Range	325 - 600	400 – 750	

Diagrame Showing Fluid during Procedure in Non Tamsulosin and Tamsulosin Group

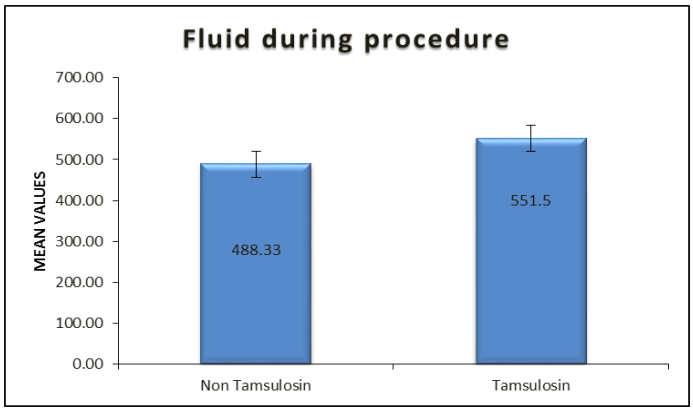

Figure- 5

In the view of above description two groups in our study were comparable in respect of baseline characteristics.

Post Voiding Residual Volume: Post voiding residual volume was calculated by ultrasonography. The mean value of post voiding residual volume in our study in non tamsulosine group was 151.5 ± 125.71 ml. and median 120 ml with minimum 30 ml and maximum 600 ml. The mean value of post voiding residual volume in our study in tamsulosine group was 67.17 ± 25.32 ml. and median 60 ml with minimum 30 ml and maximum 150 ml. P value is<.0001, which is statistically significant. It implies that post voiding residual volume is higher in non tamsulosine group.

Table-6 Post Voiding Residual Volume in Non Tamsulosin and Tamsulosin Group

PVR	Nontamsulosin	Tamsulosin	
Sample size	60	60	
Mean ± Stdev	151.5 ± 125.71	67.17 ± 25.32	<.0001
Median	120	60	
Min-Max	30-600	30-150	
Inter quartile Range	100 - 150	45 – 80	

Diagrame Showing Post Voiding Residual Volume in Non Tamsulosin and Tamsulosin Group

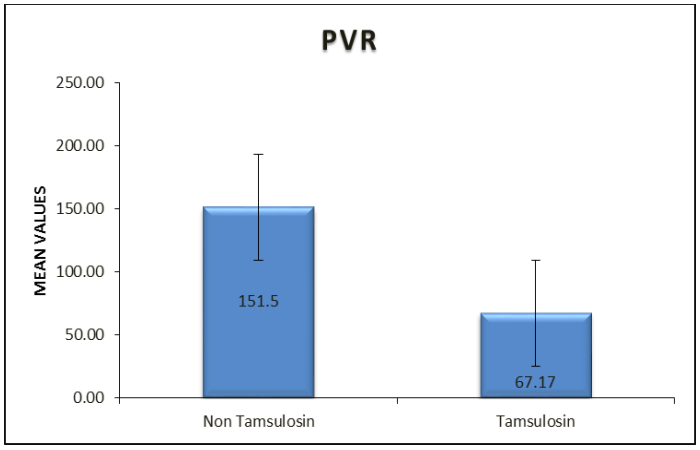

Figure- 6

Time of Urination After Procedure: In non tamsulosine group, mean time of urination after the procedure was14.38 ± 4.88 hours, with minimum 6 hours and maximum 22 hours. In tamsulosine group, mean time of urination after the procedure was9.13 ± 2.24 hours, with minimum 6 hours and maximum 18 hours. P value is<.0001, which is statistically significant. It signifies that time required for urination is more in non tamsulosine group.

Table -7 Table Showing Time of Urination after Procedure in Non Tamsulosin and Tamsulosin Group

Time of urination after procedure	Nontamsulosin	Tamsulosin	
Sample size	52	60	
Mean ± Stdev	14.38 ± 4.88	9.13 ± 2.24	<.0001
Median	14	9	
Min-Max	6-22	6-18	
Inter quartile Range	10 - 20	8 - 10	

Diagrame Showing Time of Urination after Procedure in Non Tamsulosin and Tamsulosin Group

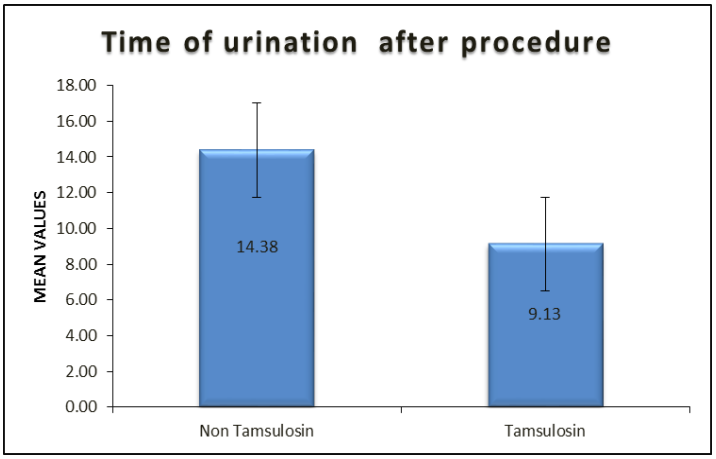

Figure-7

Usg Finding in Both Groups: In non tamsulosine group USG lower abdomen showed distended urinary bladder in 8 patients (13.33%) out of 60 patients. In tamsulosine group USG lower abdomen showed distended urinary bladder in 0 patients (0.00%) out of 60 patients. P value is 0.006, which is statistically significant.

Table- 8 Table Showing USG Finding in Non Tamsulosin and Tamsulosin Group

		GROUP			
		Non Tamsulosin	Tamsulosin	Total	P value
USG finding	distended bladder	8 (13.33%)	0 (0.00%)	8 (6.67%)	0.006
	No Findings	52 (86.67%)	60 (100.00%)	112 (93.33%)	
Total		60 (100.00%)	60 (100.00%)	120 (100.00%)	

Diagrame Showing USG Finding in non Tamsulosin and Tamsulosin Group

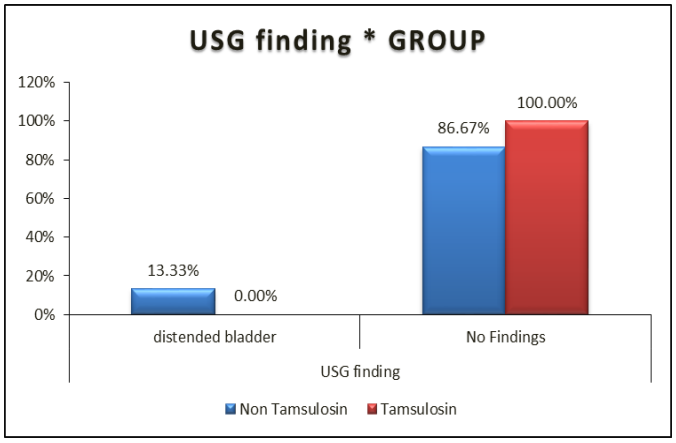

Figure- 8

Primary Outcome: Of the 60 enrolled patients who received tamsulosine, none of the patients developed urinary retention after procedure and out of 60 patients in non tamsulosine group, 8 patients were developed urinary retention after procedure.

P value is 0.006 which is statistically significant. It implies that use of tamsulosine prevent the urinary retention.

Table- 9 Table Showing Retention in Non Tamsulosin and Tamsulosin Group

		GROUP			
		Non Tamsulosin	Tamsulosin	Total	P value
Retention+/-	absent	52 (86.67%)	60 (100.00%)	112 (93.33%)	0.006
	present	8 (13.33%)	0 (0.00%)	8 (6.67%)	
Total		60 (100.00%)	60 (100.00%)	120 (100.00%)	

Diagrame Showing Retention in Non Tamsulosin and Tamsulosin Group

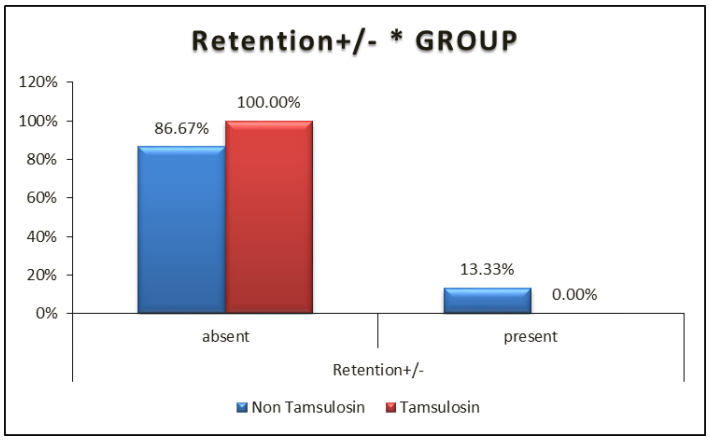

Figure- 9

Secondary Outcome: Out of 60 patients in non tamsulosin group, 18 patients required intervention for urination. 10 patients urinate after encouragement and hot water bottle application, 8 patients required foley's catheterization. Out of 60 patients of tamsulosin group 2 patients required intervention for urination. Both 2 patients urinate after hot water application, none of them required foley's catheterization. P value is 0.0001, which is statistically significant.

Table- 10 Table Showing Intervention for Retention in Non Tamsulosin and Tamsulosin Group

		GROUP			
		Non Tamsulosin	Tamsulosin	Total	P value
Intervention for retention	NONE	42 (70.00%)	58 (96.67%)	100 (83.33%)	0.0001
	Yes	18 (30.00%)	2 (3.33%)	20 (16.67%)	
Total		60 (100.00%)	60 (100.00%)	120 (100.00%)	

Diagrame Showing Intervention for Retention in Non Tamsulosin and Tamsulosin Group

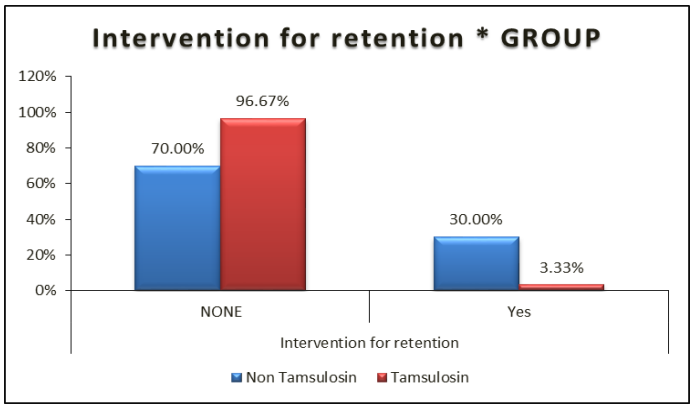

Figure-10

Side Effect of Tamsulosine: Of the 60 enrolled patients who received tamsulosine, 4 (6.67%) patients developed side effects after drug intake and out of 60 patients in non tamsulosine group, 0 patients were developed side effects after drug intake.

P value is 0.119 which is statistically non significant.

Table-11 Table Showing Side Effects of Tamsulosin in Non Tamsulosin and Tamsulosin Group

		GROUP		Total	P value
		Non Tamsulosin	Tamsulosin		
Side effect of drug	NONE	60 (100.00%)	56 (93.33%)	116 (96.67%)	0.119
	Yes	0 (0.00%)	4 (6.67%)	4 (3.33%)	
Total		60 (100.00%)	60 (100.00%)	120 (100.00%)	

Diagrame Showing Side Effect of Tamsulosine

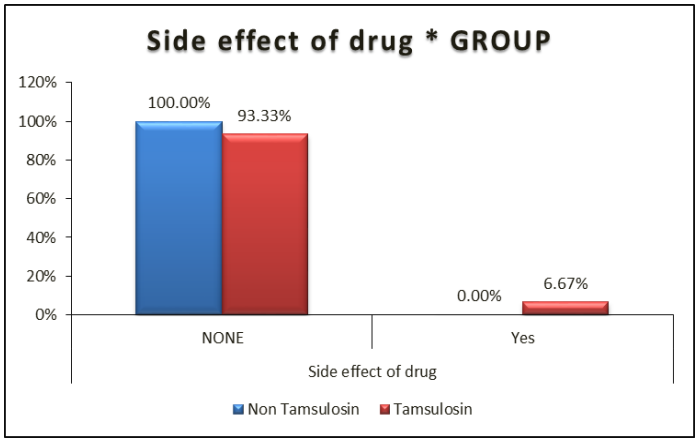

Figure-11

Analysis of the Factors Affecting Postoperative Urinary Retesion:

Age: The patients who develops postoperative urinary retention had mean age of 51.12 ± 7.49 years with minimum age was 41 years and maximum age was 65 years and the patients who did not developed postoperative urinary retention had mean age of 42.52 ± 8.64 years, with minimum age was 24 years and maximum age was 65 years. P value is 0.011, which is statistically significant. It showed that with increase in age, risk of postoperative urinary retention increases.

Table- 12 Table Showing Age of Patients Who Develop Non Retesion and Retension

	No retention	Retention	P value
AGE			
Sample size	112	8	
Mean ± Stdev	42.52 ± 8.64	51.12 ± 7.49	0.011
Median	42	50.5	
Min-Max	24-65	41-65	
Inter quartile Range	34 - 50	46 - 55	

Duration of Procedure: The patients who develops postoperative urinary retention had mean time of procedure was77.5 ± 11.65 min with minimum time was 50 min and maximum time was 85 min and the patients who did not developed postoperative urinary retention had mean time of procedure was 46.61 ± 15.84min, with minimum time was 25 min and maximum time was 85 min. P value is 0.0001, which is statistically significant. It showed that with increase in duration of procedure, risk of postoperative urinary retention increases.

Table-13 Table Showing Duration of Procedure in Patients Who Develop Non Retesion and Retension

Duration of procedure	Nonretension	Retension	
Sample size	112	8	
Mean ± Stdev	46.61 ± 15.84	77.5 ± 11.65	0.0001
Median	42.5	80	
Min-Max	25-85	50-85	
Inter quartile Range	35 - 55	77.500 - 85	

Fluid During Procedure: The patients who develops postoperative urinary retention had mean amount of fluids during procedure was 725 ± 254.95 ml with minimum fluid was 200 ml and maximum time was 1000 ml and the patients who did not developed postoperative urinary retention had mean amount of fluid during procedure was 505.27 ± 233.43 ml, with minimum fluid was 100 ml and maximum fluid was 1000 ml. P value is 0.017, which is statistically significant. It showed that with increase in amount of fluid during procedure, risk of postoperative urinary retention increases.

Table-14 Table Showing Amount of Fluid during Procedure in Patients Who Develop Non Retesion and Retension

Fluid during procedure	non retenion	retension	
Sample size	112	8	
Mean ± Stdev	505.27 ± 233.43	725 ± 254.95	0.017
Median	500	800	
Min-Max	100-1000	200-1000	
Inter quartile Range	375 - 600	650 - 850	

Univariate logistic regression for retention
Table- 15

	P value	Odds ratio	95% C.I.for odds ratio	
			Lower	Upper
Fluid during procedure	.019	1.004	1.001	1.007
Duration of procedure	.001	1.123	1.049	1.201
AGE	.014	1.129	1.025	1.243

In univariate with one unit increase in fluid during procedure, Risk of retention significantly increases by 4%.

In univariate with one unit increase in duration of procedure, Risk of retention significantly increases by 12.3% .

In univariate with one year increase in age, Risk of retention significantly increases by 12.9%.

Multivariate logistic regression for retention;
Table-16

	P value	Odds ratio	95% C.I.for odds ratio	
			Lower	Upper
Fluid during procedure	.700	0.999	0.995	1.003
Duration of procedure	.008	1.120	1.030	1.219
AGE	.575	1.032	0.924	1.154

After adjusting for confounding variables, only duration of procedure significantly affect risk of retention by 12%.

Discussion

Postoperative urinary retention is one of the most common complications of anesthesia and surgery. It occurs more frequently after lower abdominal and pelvic, gynecologic and anorectal surgeries.[7]

Overall incidence of postoperative urinary retention ranges from 5% to 70%.[1]The incidence of postoperative urinary retention in our study was 6%.

Development of postoperative urinary retention is associated with age, gender, history of underlying urologic and non-urologic disease, perioperative fluid intake, type of anesthesia and surgery and duration of surgery.[9] Postoperative urinary retention causes to major discomfort and pain after surgery and catheterization for resolving it, may lead to urethral injury or stricture or urinary tract infection and increase cost and work load and hospitalization period. Occasionally patients may suffer persistent postoperative urinary retention that complicates at the postoperative period. There are several mechanisms involving development of postoperative urinary retention. Multiple facets of surgery, anesthesia and perioperative management may interrupt the voiding reflex. Anesthesia interferes with sensation of bladder fullness. Other factor include the balance between sympathetic and parasympathetic disturb during perioperative period, systemic sympathetic discharge due to anesthesia and pain after surgery and local sympathetic motor activity due to bladder distention, inhibition of detrusor contraction and intensity of the bladder.

Outlet closure is done via increasing alpha-mediated tone in bladder outlet[6] Perineal and lower abdominal pain can inhibit the perineal relaxation that is necessary for voiding. Detrusor contractures can also be inhibited by a reflex involving afferent fibers of the pudental nerve. Immobilization and have to void in supine

position contribute to post-operative voiding dysfunction[6].

Three methods have been used to diagnose POUR:

1. History and physical examination (lower abdominal pain and discomfort and palpation or percussion of bladder in suprapubic area);
2. Bladder catheterization;
3. Ultra sonographic assessment of bladder postoperatively

Management of Postoperative urinary retention is fairly straightforward. The goal is to decompress the bladder to avoid long-term damage to bladder integrity and function. Immediate catheterization is always the first step. Although placement of an indwelling foley catheter is easier, there are several drawbacks to prolonged use of this method. It seems that prevention is better than treatment. Several studies have shown the efficacy of alpha blockers in prevention of postoperative urinary retention.

Tamsulosin, a benzene sulfonamide, is a selective α1a blocker. when α1 receptors in the bladder neck is blocked , this cause a relaxation of smooth muscle and therefore less resistance to urinary flow.

In our study, we observe the effectiveness of tamsulosine in prevention of postoperative urinary retention.

All female patients coming to emergency and outpatient department of General Surgery, Mata Channan Devi Hospital and diagnosed to have cholelithiasis and fulfilling the inclusion criteria were included in this study.

Of the total 156 female patients with cholelithiasis that reported during the study period 28 patients excluded from the study because they refused to give consent.

128 patients who fulfilling the inclusion criteria were thus enrolled in the study. During the study period 8 patients were excluded from the study because laparoscopic procedure abandon and converted to open cholecystectomy.

120 patients who were included in the study, were divided in two groups, 60 patients in each group.

The decision of allocating the patient between tamsulosin and non tamsulosin group was through computer generated random number.

Half-life of Tamsulosin is 5-10 hours so three doses with 12 hours intervals will give . Tamsulosin will administered 14 and 2 hours before and 10 hours after surgical intervention. All patients will ask for empty their bladder before surgery. NSAIDS will prescribe for post-operative pain.

Written inform consent will be obtain in all patients after explaining the effectiveness and side effects of treatment.

Out of 60 patients who were given tamsulosin, none had develop retention after procedure and out of the 60 patients who were in non tamsulosin group, 8 (13.33%) patients were develop urinary retention after precedure.P value is 0.006. This was comparable to the studies by Ali Hamidi Madani, Hamidreza Baghani Aval, et al[10], 2014 postoprative urinary retention in patients who received tamsulosin was significantly lower than placebo ((P = 0.001), and Mir Mujtaba Ahmad, Hilal A. Wani, et al[11] 2014, In tamsulosin group eight patients required catheterization with a mean urine volume of 800 ml at catheterization. In control, 56 patient required catheterization with a 600 ml mean urine volume. Thus, 18% of patients in control and 2.5% of patients in tamsulosin group had urinary retention.

The difference in the requirement for catheter-rization was statistically significant ($P < 0.0001$).

Univariate logistic regression for retention showed one unit increase in fluid during procedure, risk of retention significantly increases by 4%, and with one unit increase in duration of procedure, risk of retention significantly increases by 12.3%, andwith one year increase in age, and risk of retention significantly increases by 12.9%. But after adjusting for confounding variables, only duration of procedure significantly affect risk of retention by 12%. This was comparable to the study by, Ali Hamidi Madani, Hamidreza Baghani

Aval, et al[10], 2014, in which they found that longer operative time (OR = 1.03, 95% CI = 1 - 1.07, P = 0.027) and younger age (OR = 0.93, 95% CI = 0.87 - 0.99, P = 0.029) were other parameters that significantly influenced the rate of postoperative urinary retention.

Side effects of tamsulosin was statistically non significant P= 0.119, this was comparable to the study by, Ali Hamidi Madani, Hamidreza Baghani Aval[10], et al, 2014, in which they found that side effects were mild to moderate, and did not lead to exclusion of patients from the study.

Conclusion

In our study, tamsulosin significantly prevent the postoperative urinary retention. Side effect of Tamsulosin was statistically insignificant. In our study postoperative urinary retention depend upon duration of surgery, amount of fluid during procedure and age of patients.

Recommendations

Tamsulosin can be used to prevent postoperative urinary retention.

It prevent postoperative urinary retention and intervention for that, so prevent catheter related complications.

If clinical presentation suggests long duration of surgery and excess amount of intraoperative fluid tamsulosin help in preventing postoperative urinary retention.

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