the Effeciveness of Tamsulosin, solifenacin, and combination therapy

by Tarmono Tarmono

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THE EFFECTIVENESS OF TAMSULOSIN, SOLIFENACIN, AND COMBINATIONS THERAPY TAMSULOSIN ADDED SOLIFENACIN ON LOWER URINARY TRACT SYMPTOMS AFTER DOUBLE J STENT INSERTION

[1]Ida Bagus Putra Pramana, [1]Fikri Rizaldi, [1]Tarmono Djojodimedjo.

[1]Department of Urology, Faculty of Medicine/Universitas Airlangga, Soetomo General Hospital, Surabaya.

ABSTRACT

Objective: *Insertion of DJ Stent is a procedure that is often done by urologist. Insertion of DJ Stent can cause LUTS complaints and greatly affect the physical and psychosocial health of patients. The aim of this study was to determine the effectiveness difference of tamsulosin therapy 0.4 mg/day, solifenacin 5 mg/day and the combination of tamsulosin therapy 0.4 mg/day added solifenacin 5 mg/day to manage LUTS complaint after DJ Stent insertion.* ***Material & Methods:*** *This study was a randomized placebo-controlled trial. There were 4 groups, group I received placebo, group II received tamsulosin 0.4 mg/day, group III received solifenacin 5 mg/day, and group IV received combination therapy of tamsulosin 0.4 mg/day added solifenacin 5 mg/day. Evaluation based on International Prostatic Symptom Score (IPSS) and Ureteral Stent Symptom Questioner (USSQ) score. Data were analyzed using SPSS 21.0. It is said to be significant if $p<0.05$.* ***Results:*** *There were a total of 32 samples consist of 19 (59.3%) men and 13 (40.6%) women. There were significant improvements in the score of total IPSS, IPSS storage and IPSS quality of life score in patients who received combination therapy ($p<0.05$) when compared with patients who received monotherapy. The highest decrease in USSQ scores 1, 2, 3, 4, 5 and 6 were in the group that received combination therapy when compared with the monotherapy group.* ***Conclusion:*** *The combination therapy is safe and effective to improve IPSS total, IPSS storage and IPSS Quality of Life scores compared with monotherapy.*

Keywords: *Tamsulosin, solifenacin, combination therapy, double J stent, lower urinary tract symptoms.*

ABSTRAK

Tujuan: *Pemasangan DJ Stent merupakan prosedur yang sering dikerjakan oleh ahli urologi. Pemasangan DJ Stent dapat menimbulkan keluhan LUTS dan sangat berpengaruh terhadap kesehatan fisik dan psikososial pasien. Tujuan penelitian ini adalah untuk mengetahui perbedaan efektivitas terapi tamsulosin 0.4 mg/hari, solifenacin 5 mg/hari dan kombinasi terapi tamsulosin 0.4 mg/hari ditambah solifenacin 5 mg/hari terhadap keluhan LUTS paska pemasangan DJ Stent.* ***Bahan & Cara:*** *Penelitian ini merupakan penelitian randomized placebo controlled trial. Terdapat 4 kelompok, kelompok I yang mendapat placebo, kelompok II yang mendapatkan tamsulosin 0.4 mg/hari, kelompok III yang mendapatkan solifenacin 5 mg/hari, dan kelompok ke IV yang mendapatkan kombinasi terapi tamsulosin 0.4 mg/hari ditambah solifenacin 5 mg/hari. Data dianalisis menggunakan SPSS 21.0. Dikatakan signifikan jika $p<0.05$.* ***Hasil:*** *Terdapat total 32 sample dalam penelitian ini. Terdapat perbaikan skor yang signifikan terhadap IPSS total, IPSS storage dan IPSS quality of life pada pasien yang mendapatkan kombinasi terapi ($p<0.05$), jika dibandingkan kelompok yang mendapat monoterapi. Penurunan rerata skor USSQ 1, 2, 3, 4, 5 dan 6 terbesar pada kelompok yang mendapatkan kombinasi terapi jika dibandingkan dengan kelompok yang mendapat monoterapi.* ***Simpulan:*** *Kombinasi terapi efektif dan aman dalam memperbaiki skor IPSS total, IPSS storage dan IPSS Quality of Life jika dibandingkan dengan pemberian monoterapi.*

Kata Kunci: *Tamsulosin, solifenacin, kombinasi terapi, double J stent, lower urinary tract symptoms.*

Correspondence: Tarmono Djojodimedjo; c/o: Department of Urology, Faculty of Medicine/Universitas Airlangga, Soetomo General Hospital, Surabaya. Jl. Mayjen. Prof. Dr. Moestopo 6-8 Surabaya 60286. Phone: +62315501318; Fax: +62315024971. Mobile phone: +6281805430537. Email: tar_urology@yahoo.com

INTRODUCTION

Since the 19th century the use of ureteral stent has begun to used in surgery. The insertion of the ureter stent was first introduced by Zimskind in 1967. Finney and Hepperlen in 1978 developed double J or double pigtail stents with self-retaining mechanisms, to prevent migration or expulsion from stent.[1,2]

The purpose of DJ stent insertion is generally to overcome ureteral obstruction that requires urine drainage.[1] Benefits of ureter stent

insertion not only as prevention but also as treatment of ureteral obstruction, because of primary factor that is obstruction in ureter (intraluminal) and also secondary from outside the ureter (extraluminal).[1-3]

The insertion of a DJ stent may also cause some side effects in the urinary tract.[4] The discomfort caused by DJ stents varies for each patient, but it thought to affect more than 80% of patients.[5] LUTS complaints that arise include frequency (50-60%), urgency (57-60%), dysuria (40%). While other complaints are flank pain (19-32%), suprapubic pain (30%), and hematuria (25%).[6]

In a previous study, tamsulosin 0.4 mg for 2 weeks showed a significant improvement in IPSS score compared with the initial IPSS score in 2 weeks post-insertion of DJ stent.[7] Tamsulosin was able to reduce LUTS complaints, low back pain and improve quality of life.[8] In a randomized controlled trial (RCT) study, 5 mg daily solifenacin may reduce LUTS post-insertion DJ Stent complaints. This study compared tamsulosin and solifenacin in reducing LUTS complaints post-insertion DJ stent, solifenacin have better results in LUTS rather than tamsulosin.[8]

Two other RCT studies compared the effects of combination therapy tamsulosin added solifenacin in reducing LUTS complaints after DJ Stent insertion showed significant results in improving IPSS and USSQ scores compared to monotherapy with tamsulosin or solifenacin.[8]

OBJECTIVE

LUTS management post-insertion of DJ stent has not been much studied and published, especially in Indonesia. The aim of this study was to compare the differences between IPSS and USSQ scores, before and after tamsulosin 0.4 mg daily, 5 mg daily solifenacin and combination therapy tamsulosin 0.4 mg daily added 5 mg daily solifenacin after insertion of DJ stent.

MATERIAL & METHODS

This research was a prospective randomized clinical trial with pre - post control study. Patients were grouped into 4 groups, group 1 was given Placebo on the 7th day post-insertion of unilateral DJ stent for 2 weeks, group 2 was given tamsulosin 0.4 mg daily on the 7th day after insertion of DJ stent for 2 weeks, group 3 was given solifenacin 5 mg daily on 7th day after insertion of DJ stent for 2 weeks, group 4 was given combination therapy tamsulosin 0.4 mg daily added solifenacin 5 mg daily. The approximate minimal sample size was determined by using the experimental sample formula with 4 groups based on the ratio/interval data. The number of samples required by each group is 8 people. In the day 7th after the insertion of DJ Stent, IPSS and USSQ score were evaluated. The success of therapy was evaluated at day 7 and day 14 after therapy by counting IPSS and USSQ score.

The inclusion criteria in this study were patients with an indication of DJ stent insertion sized 6 Fr inserted by endoscopic device, age between 21-50 years old, willing to follow and sign research approval, patient with IPSS score more than 7 after DJ Stent insertion. The exclusion criteria of this study were Patients who received α-blocker, antimuscarinic or PDE-5 inhibitor therapy before the study, patients with malignant disease, patients with glaucoma and cataracts, patients with diabetes mellitus, patients with heart disease (hypertension, coronary heart disease), patients with acute renal impairment or chronic kidney disease, patients with symptoms of LUTS, neurogenic bladder before surgery, allergic to tamsulosin or solifenacin, on the BOF the tip of the DJ stent in the bladder is not perfectly circular (2 loops), DJ Stent malposition. The patient dropout criteria were patients who did not continue the study or did not control after administration of the drug, and patients with severe drug side-effects which occurred and caused emergency injury. In the day 7th after the insertion of DJ Stent, IPSS and USSQ score were evaluated. The success of therapy was evaluated at day 7th after therapy and day 14th after therapy by counting IPSS and USSQ score. The IPSS and USSQ questionnaires in Indonesian language have been tested for their validity and reliability. This research has been approved by the commission of ethics Soetomo Hospital Surabaya.

Before hypothesis testing, homogeneity test of the data and also the normality of data distribution were determined by Shapiro-Wilk test. If the data is normally distributed then the statistical tests used are parametric tests such as paired t test for two independent groups and ANOVA post hoc test for more than 2 independent groups. Pre-post test of more than 2 dependent groups using one way ANOVA repeated test. If the data is not normally distributed then use non - parametric tests such as Wilcoxon Signed rank for two dependent data groups, and Mann-Whitney U for two independent

data sets. To compare four independent data groups which is not normally distribute using Kruskal Wallis test, and pre test - post test data dependent more than two groups using Friedman test. This research is significant if the value of $p<0.05$. All technical data processing is analyzed using computerized statistical product and service solution 21 for windows (SPSS 21).

RESULTS

This study analyzed 32 samples consisted of 19 (59.3%) men and 13 (40.6%) women. The mean age of patients in this study was 37.44 ± 6.03 years old. From this study, 14 (43.7%) patients were diagnosed with proximal ureteral stones, 11 (34.3%) patients with distal ureteral stones and 7 patients (21.8%) were diagnosed with ureteral stenosis. There were 21 (65.6%) patients with moderate LUTS and 11 (34.3%) patients with severe LUTS (Table 1). As much as 65% of sample in this study worked as part-time, and 18.75% worked as full-time employees. There were 31.2% samples complained suprapubic pain, 25% complained pain in kidneys area, 21.8% had lower back pain, 12.5% experienced pain in the groin area and 9.3% complained pain in penis area (Table 2).

The pre-test and post-test in the placebo group showed that there was no significant differences between the IPSS Total score, IPSS Storage, IPSS Voiding, USSQ 3, USSQ 4, USSQ 5 and USSQ 6 before therapy compared with after therapy ($p>0.05$). There was an increase in mean score of USSQ 1 at the time before therapy compared with day 14th after therapy, and day 7th after therapy compared with day 14th after therapy ($p<0.05$). There was an increase in mean score of USSQ 2 on day 7th after therapy compared with day 14 after therapy ($p<0.05$) (Table 3).

Table 2. Patient characteristic.

Characteristic	Number	
Occupation	Housewife	2
	Student	2
	Part Time	21
	Full Time	6
	Not Working	1
Pain Symptoms	Back Flank	7
	Front/Side Flank	8
	Bladder	10
	Penis	3
	Crotch	4

The pre-test and post-test in the 0.4 mg daily tamsulosin group showed there were improvements in IPSS Total score, IPSS Voiding, IPSS quality of life, USSQ 1, USSQ 2, USSQ 3 and USSQ 6 before therapy compared with after therapy ($p<0.05$), while there were no improvements in IPSS Storage score, USSQ 4 and USSQ 5 before and after therapy ($p>0.05$) (Table 4).

The pre-test and post-test in the 5 mg daily solifenacin group showed there were improvements in IPSS Total score, IPSS Storage, IPSS quality of life, USSQ 1, USSQ 2, USSQ 3, USSQ 4 and USSQ 6 before therapy compared with after therapy ($p<0.05$), while there were no improvement in IPSS Voiding score and USSQ 5 before and after therapy ($p>0.05$) (Table 5).

Table 1. Patient characteristic.

Characteristic		Intervation				Total and Mean	p
		Placebo	Tamsulosin 0.4 mg daily	Solifenacin 5 mg daily	Tamsulosin 0.4 mg daily + Solifenacin 5 mg daily		
Gender	M	4	5	5	5	19	0.92*
	F	4	3	3	3	13	
Age (years)		36.75 ± 5.49	37.13 ± 6.51	36.75 ± 6.79	39.13 ± 6.03	37.44 ± 6.03	0.90*
Diagnose	Pro	4	3	4	3	14	0,93*
	Dis	2	3	3	3	11	
	Ste	2	2	1	2	7	
LUTS	M	6	7	4	4	21	0.01*
	S	2	1	4	4	11	

M: Male, F: Female, Pro: Ureteral Proximal Stone, Dis: Ureteral Distal Stone, Ste: Stenosis ureteral. M: Moderate LUTS, S: Severe LUTS, *: Homogeneity test, homogen if $p>0.05$.

Table 3. Pre-test and post-test placebo.

Variable (mean ± SD)	Score			p
	Before	D+7	D+14	
IPSS Total	15.50 ± 4.47	16.0 ± 4	17.0 ± 4.3	p>0.05*
IPSS Storage	6.5 ± 1.7	7.3 ± 2	7.38 ± 1.9	p>0.05*
IPSS Voiding	9.0 ± 2.8	8.63 ± 3.02	9.63 ± 2.5	p>0.05*
IPSS Quality of Life	3.7 ± 1.1[a]	3.25 ± 0.8[a]	3.63 ± 0.74	p<0.05#
USSQ 1	25.88 ± 6.8[a]	27.88 ± 6.3[b]	29.3 ± 6.2[a,b]	p<0.05*
USSQ 2	16.75 ± 6.13	18.5 ± 5.2[a]	19.25 ± 5.0[a]	p<0.05*
USSQ 3	13.25 ± 5.4	14.38 ± 4.9	15.63 ± 5.8	p>0.05*
USSQ 4	11.38 ± 1.9	12.8 ± 2.5	12.5 ± 2.4	p>0.05*
USSQ 5	5.2 ± 0.9	5.29 ± 1.25	5.71 ± 1.2	p>0.05#
USSQ 6	12.38 ± 4.4	13.38 ± 3.5	14.38 ± 3.4	p>0.05*

a-a, b-b, c-c: Significant different between group p<0.05, *: one way Anova repeated test, #: Friedman test, and Wilcoxon test between 2 group, significant p<0.05.

Table 4. Pre-test and post-test tamsulosin 0.4 mg daily.

Variable (mean ± SD)	Score			p
	Before	D+7	D+14	
IPSS Total	15.62 ± 4.13[a]	13.3 ± 2.9	11.13 ± 2.8[a]	p<0.05*
IPSS Storage	6.38 ± 1.7	5.8 ± 1.6	5.2 ± 1.2	p>0.05*
IPSS Voiding	9.2 ± 2.7[a,b]	7.25 ± 1.7[a]	5.88 ± 1.7[b]	p<0.05*
IPSS Quality of Life	3.7 ± 1.0[a,b]	3.13 ± 0.9[a]	2.38 ± 1.06[b]	p<0.05#
USSQ 1	27.25 ± 4.3[a]	23.88 ± 4.12	18.3 ± 4.2[a]	p<0.05*
USSQ 2	18.75 ± 2.4[a,b]	14.0 ± 2.0[a]	11.5 ± 3.5[b]	p<0.05*
USSQ 3	16.5 ± 2.5[a]	12.37 ± 2.32	9.0 ± 2.3[a]	p<0.05*
USSQ 4	12.5 ± 2.8	8.63 ± 3.3	6.2 ± 3.6	p>0.05*
USSQ 5	6.14 ± 2.1	6.14 ± 2.19	5.14 ± 2.3	p>0.05*
USSQ 6	13.6 ± 3.0[a]	11.63 ± 2.3[b]	8.6 ± 1.7[a,b]	p<0.05*

a-a, b-b, c-c: Significant Different between group p<0.05, *: one way anova repeated test, #: Friedman test, and Wilcoxon test between 2 group, significant p<0.05.

Table 5. Pre-test and post-test solifenacin 5 mg daily.

Variable (mean ± SD)	Score			p
	Before	D+7	D+14	
IPSS Total	18.83 ± 5.15[a,b]	15.6 ± 3.7[a,c]	13.3 ± 3.2[b,c]	p<0.05*
IPSS Storage	8.0 ± 2.2[a]	6.63 ± 1.6[b]	5.38 ± 1.06[a,b]	p<0.05*
IPSS Voiding	10.2 ± 3.1	9.0 ± 2.3	8.0 ± 2.5	p>0.05*
IPSS Quality of Life	4.8 ± 1.9[a]	3.5 ± 0.7[b]	2.38 ± 1.06[a,b]	p<0.05*
USSQ 1	30.38 ± 5.4[a,b,]	23.6 ± 4.06[a,c]	17.13 ± 2.9[b,c,]	p<0.05*
USSQ 2	21.75 ± 4.6[a,b,]	16.0 ± 2.07[a,c]	11.88 ± 2.2[b,c,]	p<0.05*
USSQ 3	18.5 ± 3.9[a,b,]	14.13 ± 3.13[a,c]	8.7 ± 1.9[b,c]	p<0.05*
USSQ 4	14.7 ± 2.4[a]	10.5 ± 3.3[b]	7.3 ± 2.5[a,b]	p<0.05*
USSQ 5	6.14 ± 1.4	5.0 ± 1	3.5 ± 1.3	p>0.05*
USSQ 6	15.6 ± 2.9[a,b]	11.75 ± 1.2[a,c]	8.8 ± 1.3[b,c]	p<0.05*

a-a, b-b, c-c: Significant different between group p<0.05, *: one way anova repeated test, #: Friedman test, and Wilcoxon test between 2 group, significant p<0.05.

The pre-test and post-test in the group who received a combination therapy of 0.4 mg daily tamsulosin added 5 mg daily solifenacin showed there were improvements in IPSS Total score, IPSS voiding, IPSS storage, IPSS quality of life, USSQ 1, USSQ 2, USSQ 3, USSQ 4, USSQ 5 and USSQ 6 before therapy compared with after therapy ($p<0.05$) (Table 6).

This four groups test showed that the highest decrease in the mean score of IPSS total, IPSS storage, IPSS voiding and IPSS quality of life were found in the group who received combination therapy. The combination therapy was better in improving score of IPSS total, IPSS storage and IPSS quality of life compared with placebo, tamsulosin monotherapy and solifenacin monotherapy ($p<0.05$). There was an improvement in IPSS voiding score in the group who received combination therapy and tamsulosin monotherapy when compared with placebo ($p<0.05$), while there was no improvement in IPSS Voiding score between the group who received solifenacin monotherapy compared with those who received placebo ($p>0.05$) (Table 7 and Graphic 1).

Table 6. Pre-test and post-test tamsulosin 0.4 mg daily added solifenacin 5 mg daily.

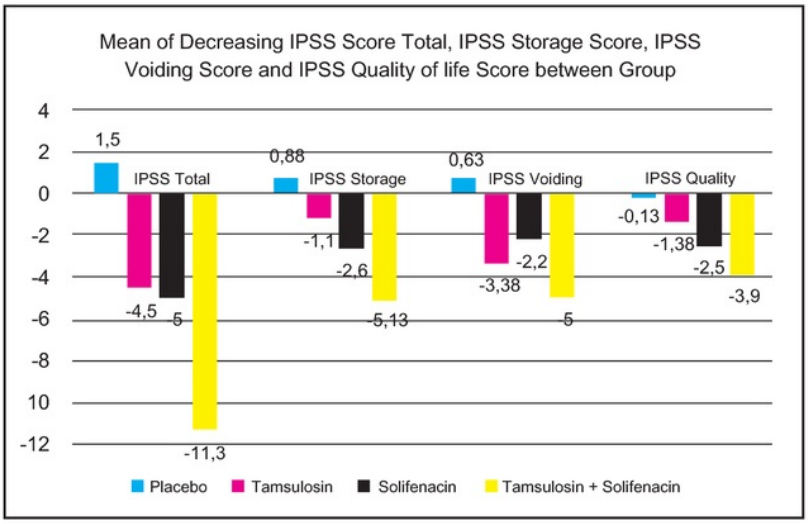
Variable (mean ± SD)	Score			p
	Before	D+7	D+14	
IPSS Total	19.75 ± 4.13 [a,b,]	14.3 ± 3.0 [a,c]	9.6 ± 2.1 [b,c,]	p<0.05*
IPSS Storage	7.34 ± 2.0 [a,b,]	5.6 ± 1.1 [a,c]	3.38 ± 1.4 [b,c,]	p<0.05*
IPSS Voiding	11.2 ± 2.6 [a]	8.8 ± 2.1 [b]	6.2 ± 1.0 [a,b]	p<0.05*
IPSS Quality of Life	4.7 ± 0. 7 [a,b]	2.8 ± 1.1 [a]	1.38 ± 0.74 [b]	p<0.05*
USSQ 1	30.63 ± 4.6 [a,b,]	21.8 ± 2.4 [a,c]	15.13 ± 1.3 [b,c,]	p<0.05*
USSQ 2	22.63 ± 3.9 [a,b,]	14.0 ± 3.07 [a,c]	8.38 ± 1.8 [b,c,]	p<0.05*
USSQ 3	19.8 ± 3.3 [a,b]	12.63 ± 3.3 [a,c]	7.8 ± 1.8 [b,c]	p<0.05*
USSQ 4	14.5 ± 2.4 [a,b]	7.75 ± 3.2 [a,c]	4.3 ± 2.8 [b,c]	p<0.05*
USSQ 5	7.5 ± 1.8 [a,b]	5.37 ± 2.3 [a,c]	2.88 ± 0.4 [b,c]	p<0.05*
USSQ 6	14.8 ± 1.7 [a]	11.5 ± 2.3 [b]	7.25 ± 1.8 [a,b]	p<0.05*

a-a, b-b, c-c: Significant different between group $p<0.05$, *: one way Anova repeated test, #: Friedman test, and Wilcoxon test between 2 group, significant $p<0.05$.

Table 7. Test between 4 group placebo, tamsulosin 0.4 mg daily, solifenacin 5 mg daily and tamsulosin 0.4 mg daily added solifenacin 5 mg daily based on decreasing score IPSS total, IPSS storage, IPSS voiding and IPSS quality of life.

Variable (mean ± SD)	Intervation				p
	Placebo	Tamsulosin 0.4 mg daily	Solifenacin 5 mg daily	Tamsulosin 0,4 mg daily added solifenacin 5 mg daily	
Mean of Decreasing IPSS Total Score Pre-H+14	1.5 ± 2.6 [a,b,c]	-4.5 ± 3.2 [a,d]	-5.0 ± 2.9 [b,e]	-11.3 ± 3.64 [c,d,e]	<0.05*
Mean of Decreasing IPSS *Storage* Score Pre-H+14	0.88 ± 1.1 [a,b,c]	-1.1 ± 0.9 [a,d]	-2.6 ± 1.59 [b,e]	-5.13 ± 1.45 [c,d,e]	<0,05*
Mean of Decreasing IPSS *Voiding* Score Pre-H+14	0.63 ± 1.6 [a,b]	-3.38 ± 2.8 [a]	-2.2 ± 2.5	-5.0 ± 2.7 [b]	<0.05*
Mean of Decreasing IPSS *Quality of Life* Score Pre-H+14	-0.13 ± 0.9 [a,b,c]	-1.38 ± 1.06 [a,d]	-2.5 ± 1.9 [b,e]	-3.9 ± 0.9 [c,d,e]	<0.05#

a-a, b-b, c-c, d-d, e-e: Significantly different between group $p<0.05$, *: One Way Anova test, #: Kruskal wallis test and followed by Mann-Whitney U between 2 group, significant $p<0.05$.



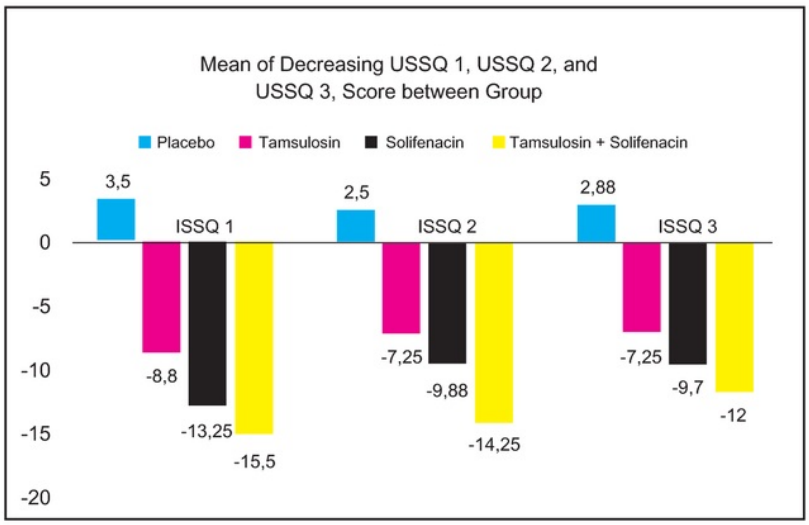
Graphic 1. Mean of decreasing IPSS score total, IPSS storage score, IPSS voiding score and IPSS quality of life score between group.

Table 8. Test between 4 group placebo, tamsulosin 0.4 mg daily, solifenacin 5 mg daily and tamsulosin 0.4 mg daily added solifenacin 5 mg daily based on decreasing score USSQ 1, USSQ 2, USSQ 3, USSQ 4, USSQ 5 and USSQ 6.

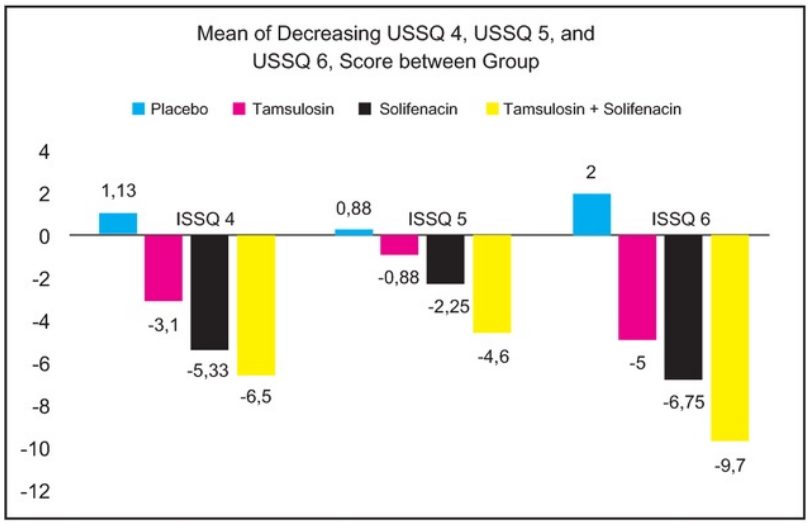
Variable (mean ± SD)	Intervation				p
	Placebo	Tamsulosin 0.4 mg daily	Solifenacin 5 mg daily	Tamsulosin 0.4 mg daily added solifenacin 5 mg daily	
Mean of Decreasing USSQ 1 Score Pre-H+14	3.5 ± 2.13 [a,b,c]	-8.8 ± 6.7 [a]	-13.25 ± 5.7 [b]	-15.5 ± 5.3 [c]	<0.05[#]
Mean of Decreasing USSQ 2 Score Pre-H+14	2.5 ± 2.61 [a,b,c]	-7.25 ± 5.3 [a,d]	-9.88 ± 5.3 [b]	-14.25 ± 3.8 [c,d]	<0.05[*]
Mean of Decreasing USSQ 3 Score Pre-H+14	2.88 ± 2.7 [a,b,c]	-7.25 ± 4.7 [a]	-9.7 ± 4.13 [b]	-12.0 ± 3.2 [c]	<0.05[*]
Mean of Decreasing USSQ 4 Score Pre-H+14	1.13 ± 1.9 [a,b]	-3.1 ± 5.1	-5.53 ± 3.7 [a]	-6.5 ± 5.2 [b]	<0.05[#]
Mean of Decreasing USSQ 5 Score Pre-H+14	0.38 ± 0.5 [a,b,c]	-0.88 ± 1.3 [a,d]	-2.25 ± 2.1 [b]	-4.6 ± 2.1 [c,d]	<0.05[#]
Mean of Decreasing USSQ 6 Score Pre-H+14	2.0 ± 1.8 [a,b,c]	-5.0 ± 3.6 [a]	-6.75 ± 2.4 [b]	-9.7 ± 2.5 [c]	<0.05[#]

a-a, b-b, c-c, d-d, e-e: Significantly different between group $p<0.05$, *: One Way Anova test, #: Kruskal wallis test and followed by Mann-Whitney U between 2 group, significant $p<0.05$

This four groups test showed that the highest decrease in the mean score of USSQ 1, USSQ 2, USSQ 3, USSQ 4, USSQ 5, and USSQ 6 were found in the group who received combination therapy. The combination therapy and tamsulosin monotherapy were better in improving score of USSQ 1, USSQ 2, USSQ 3, USSQ 4, USSQ 5 and USSQ 6 when compared with placebo ($p<0.05$). Solifenacin monotherapy was better in improving score of USSQ 1, USSQ 2, USSQ 3, USSQ 5 and USSQ 6 when compared with placebo ($p<0.05$) (Table 8, Graphic 2 and 3).



Graphic 2. Mean of decreasing USSQ 1, USSQ 2 and USSQ 3 score between group.



Graphic 3. Mean of decreasing USSQ 4, USSQ 5 and USSQ 6 score between group.

From this study, 3 patients who received placebo experienced lower back pain and suprapubic pain, 1 patient who received tamsulosin therapy 0.4 mg/day complained dry mouth syndrome, and 1 patient complained lower back pain. 1 patient who received solifenacin 5 mg/day had constipation complaint and 1 patient complained nausea. 2 patients who received combination therapy complained nausea, while 1 patient had diarrhea complaint. There was no drop out and no occurrence of severe adverse events in this study. There were no patient had urinary retention in this study.

DISCUSSION

Drug administration such as alpha-blocker and anti-muscarinic groups will be very useful in reducing the complaints. Alpha blockers can reduce the spasm of the ureteric smooth muscle and can reduce intra-renal reflux. Irritating complaints

(frequency, dysuria, and urgency) may be improved by blocking alpha receptors in the bladder neck and trigonum areas.[4,9]

Solifenacin works by blocking the muscarinic receptor which selectively blocks the M3 subtype receptor, thus inhibiting the binding of acetylcholine to muscarinic receptors. This will decrease the spasm of the detrusor muscle, thereby reducing LUTS complaints in post-insertion DJ stent patients.[5]

In this study, the mean score of total IPSS before therapy in the placebo group was 15.50 ± 4.47, Tamsulosin group was 15.62 ± 4.13, the group received solifenacin was 18.83 ± 5.15, and the group who received combination therapy tamsulosin added solifenacin was 19.75 ± 4.13. This result showed an increase in IPSS score 7 days after the insertion of DJ Stent, this result is higher than the study conducted by Lim KT that evaluated IPSS score one day after surgery, which IPSS score in placebo group was 11.65 ± 4.38, Tamsulosin group was 12.53 ± 4.79, the group received solifenacin was 11.16 ± 5.13, and the group received the combination therapy tamsulosin added solifenacin was 11.47 ± 3.98.[10] In a study conducted by Joshi et al., complaints related to DJ stent has appeared in the first week after the insertion of DJ stent. There were significant increases in USSQ scores compared with the control group.[11]

Research conducted by Oelke et al., on the effects of tamsulosin 0.4 mg and tadalafil 5 mg on LUTS complaints in BPH, 0.4 mg tamsulosin was found to have improved the total IPSS score 1 week after administered compared with placebo.[12] Research conducted by Wang et al., there was a difference in USSQ sub domains of micturition complaints, and the general condition in the tamsulosin group compared with the placebo group. However, the study was significant in male patients under 50 years old. In women under 50 years, there was no difference between tamsulosin and plasebo.[13] In a study conducted by Essam Shalaby et al., showed after administration of tamsulosin 0.4 mg/day, there was an improvement of voiding score. Research conducted by Damiano et al., showed that administered tamsulosin 0.4 mg/day as monotherapy can improve the USSQ score.[4] While the study conducted by Kuyumcuoglu et al., showed that there is no difference between tamsulosin and placebo in solving LUTS complaints after DJ stent insertion.[14] Research conducted Lim KT showed tamsulosin significantly improved obstructive complaints.[10]

Research conducted by Devendra et al., which assessed the effectiveness of tamsulosin therapy in LUTS patients after DJ Stent insertion showed improvement in total IPSS on day 7 after therapy.[15] Research conducted by Lee et al., showed improvement of LUTS and USSQ 2 complaints after monotherapy solifenacin.[16] Reasearch conducted by Essam Shalaby et al., showed an improvement of IPSS storage score, hematuria and significant pain complaints after administration of solifenacin 5 mg/day, compared with placebo.[8] Research conducted by Lim KT showed solifenacin improved total IPSS score and decreased storage complaint.[10] A study conducted by Essam Shalaby et al., showed an improvement of total IPSS score and IPSS Voiding score after administering a combination therapy tamsulosin 0.4 mg/day added solifenacin 5 mg/day.

Research conducted by Essam Shalaby et al., and Lim KT et al., showed improvement of IPSS score, total IPSS storage, IPSS Voiding, IPSS quality of life which is significantly different in patients received combination therapy, when compared with the group received placebo, tamsulosin monotherapy and solifenacin monotherapy.[10,17] From the study by Navanimitkul et al., there was also a decrease in IPSS storage, IPSS voiding, and total IPSS scores on tamsulosin compared with placebo.[7] In Subkhan et al., study, there was a decrease in IPSS storage, total IPSS and IPSS quality of life on tamsulosin 0.4 mg/day and solifenacin 5 mg/day compared with placebo. There was no difference in IPSS voiding on tamsulosin 0.4 mg and solifenacin 5 mg/day for 2 weeks compared with placebo.[3]

A study conducted by Ashraf et al., showed improvement in scores of USSQ 1, USSQ 2, USSQ 3, USSQ 4, USSQ 5 and USSQ 6 which were significantly different when combination tamsulosin added solifenacin therapy compared with placebo, tamsulosin monotherapy and solifenacin monotherapy, but when tamsulosin monotherapy compared with solifenacin monotherapy there was no significant difference.[8]

CONCLUSION

There was a significant difference between the four groups. Group I that received placebo, Group II that received tamsulosin 0.4 mg daily, Group III that received solifenacin 5 mg daily and group IV that received a combination therapy tamsulosin 0.4 mg daily added solifenacin 5 mg daily

in LUTS patients after insertion of DJ Stent. The combination therapy is safe and effective to improve IPSS Total, IPSS Storage and IPSS Quality of Life when compared with tamsulosin monotherapy and solifenacin monotherapy. Combination therapy is also effective to improve the USSQ score.

In patients with LUTS after DJ Stent insertion, evaluation of IPSS and USSQ is essential, tamsulosin monotherapy or solifenacin monotherapy can be given based on dominant symptoms that arise, whether the complaints of storage or voiding.

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the Effeciveness of Tamsulosin, solifenacin, and combination therapy

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GENERAL COMMENTS

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