

THE CORRELATION OF LOWER URINARY TRACT SYMPTOMS (LUTS) ON BENIGN PROSTATIC HYPERPLASIA (BPH) PATIENTS AND ERECTILE DYSFUNCTION IN RADEN MATTATHER HOSPITAL JAMBI

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ABSTRACT

Objective: This study aims to determine the relationship between Lower Urinary Tract Symptoms (LUTS) in patients with Benign Prostatic Hyperplasia (BPH) and erectile dysfunction at Raden Mattaher Hospital Jambi. **Material & Methods:** This research is an observational analytic with a cross sectional approach. The sample of this study includes 48 people using total sampling technique. Data analysis was carried out to test the hypothesis by the Spearman correlation test. **Results:** Based on the results of the Spearman correlation test analysis showed that there was a statistically significant relation ($p=0.000$) between Lower Urinary Tract Symptoms (LUTS) in patients with Benign Prostatic Hyperplasia (BPH) and erectile dysfunction. **Conclusion:** There is a significant relation between Lower Urinary Tract Symptoms (LUTS) in patients with Benign Prostatic Hyperplasia (BPH) and erectile dysfunction at Raden Mattaher Hospital Jambi.

Keywords: LUTS, BPH, erectile dysfunction.

ABSTRAK

Tujuan: Tujuan penelitian ini untuk mengetahui hubungan antara keluhan Lower Urinary Tract Symptoms (LUTS) pada pasien Benign Prostatic Hyperplasia (BPH) dengan disfungsi ereksi di RSUD Raden Mattaher Jambi. **Bahan & Cara:** Jenis penelitian yang digunakan yaitu analitik observasional dengan pendekatan cross sectional. Sampel yang didapatkan dalam penelitian ini berjumlah 48 orang dengan pemilihan sampel menggunakan teknik total sampling. Analisis data dilakukan untuk menguji hipotesis dilakukan dengan uji korelasi Spearman. **Hasil:** Berdasarkan hasil analisis uji korelasi Spearman menunjukkan bahwa terdapat hubungan yang bermakna secara statistik ($p=0.000$) antara keluhan Lower Urinary Tract Symptom (LUTS) pada pasien Benign Prostatic Hyperplasia (BPH) dengan disfungsi ereksi. **Simpulan :** Terdapat hubungan yang bermakna antara keluhan Lower Urinary Tract Symptom (LUTS) pada pasien Benign Prostatic Hyperplasia (BPH) dengan disfungsi ereksi yang berada di RSUD Raden Mattaher Jambi.

Kata Kunci: LUTS, BPH, disfungsi ereksi.

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INTRODUCTION

Benign Prostatic Hyperplasia (BPH) patients are usually accompanied by complaints of Lower Urinary Tract Symptoms (LUTS).¹ BPH can occur in old men and causes LUTS that can reduce the quality of life and is correlated to health.² Lower Urinary Tract Symptoms (LUTS) are a group of

symptoms consisting of storage, voiding, and post-voiding.³ To assess the severity of LUTS, it can use the International Prostate Symptoms Score (IPSS).¹ Patients with LUTS/BPH have a higher possibility to experience erectile dysfunction, and LUTS/BPH often occurs together with erectile dysfunction.² Erectile dysfunction is the inability to achieve and maintain an adequate erection during sexual

intercourse.³ International of Erectile Function-5 (IIEF-5) is a score index to identify erectile dysfunction.¹ In Indonesia, BPH is the second most common disease after urinary tract stones. Around 5 million men over 60 years old suffer from LUTS, which is caused by BPH.⁴ In Rumah Sakit Cipto Mangunkusumo (RSCM) in 1994- 2013, it was found 3.804 cases of BPH with an average age of 66.61 years old.⁵ Based on a study conducted by the Multi-national Survey of Aging Men (MSAM), it was found that 90% of research subjects with LUTS symptoms had the possibility to have erectile dysfunction, in which 10% of them could not have an erection at all. All men with LUTS/BPH symptoms need to be evaluated for erectile dysfunction and vice versa.⁶

According to the large prevalence, BPH is a serious public health problem because it can affect the quality of life, especially erectile dysfunction and ejaculation problems.⁴ Until this time, there is no study about the correlation between LUTS complaints on patients with Benign Prostatic Hyperplasia (BPH) and erectile dysfunction, especially in Jambi. Therefore, the researcher is interested to study this topic by taking the population of BPH patients at Raden Mattaher Hospital, Jambi Province.

OBJECTIVE

This study aims to determine the relationship between Lower Urinary Tract Symptoms (LUTS) in patients with Benign Prostatic Hyperplasia (BPH) and erectile dysfunction at Raden Mattaher Hospital Jambi.

MATERIAL & METHODS

The type and research design used in this study were observational analytic with a cross-sectional approach, which was conducted at Raden Mattaher Hospital Jambi by interviews and questionnaires, which was guided directly by the researcher using the IPSS and IIEF-5 questionnaire. The study was conducted for 3 months, from September to November 2021. The respondents in this study were 48 BPH patients at Raden Mattaher Hospital Jambi, who met the inclusion criteria. Furthermore, an analysis of the data obtained was conducted.

The inclusion criteria in this study included BPH patients with LUTS aged ≥ 50 years old,

patients who had never received medical therapy or surgery for BPH and erectile dysfunction, and BPH patients who were willing to be respondents.

The data collected were profiles of BPH patients based on age, degree of LUTS, degree of erectile dysfunction, and comorbid disease. The data of characteristics were obtained from interviews with the subjects. The degree of LUTS was assessed using the International Prostate Symptom Score (IPSS) questionnaire. The degree of erectile dysfunction was assessed using the International Index of Erectile Function-5 questionnaire. Then, the age and comorbid disease were assessed by anamnesis on the patients. The results of the age measurement were divided into 4 categories, 50-59 years old, 60-69 years old, 70-79 years old, and 80-89 years old. The degree of LUTS was divided into 3 categories, mild, moderate, and severe. The degree of DE was divided into 5 categories, normal, mild, mild-moderate, moderate, and severe.

The data collected was then processed by editing, coding, data entry, and cleaning. The data obtained were analyzed using univariate and bivariate analysis techniques. Data analysis to test hypotheses were conducted using the SPSS (Statistics Program for Social Science) computer program version 25.

RESULTS

The samples of the study were obtained from the Surgical Ward and Surgical Polyclinic of Raden Mattaher Hospital Jambi from September to November 2021 on BPH patients with LUTS complaints, who met the inclusion criteria and exclusion criteria were 48 subjects.

Table 1. Distribution of BPH Patients with LUTS By Age Categories.

Age	Frequency	Percentage (%)
50 – 59 years old	8	16.7
60 – 69 years old	24	50
70 – 79 years old	15	31.3
80 – 89 years old	1	2.1
Total	48	100

Table 1 shows that respondents' age ranged from 50 to 89 years old. Based on the age group, BPH patients with LUTS symptoms in Raden Mattaher Hospital Jambi were mostly 60- 69 years old, which were 24 respondents (50%).

Table 2. Distribution of IPSS Scores in BPH Patients with LUTS.

Degree of LUTS	Frequency	Percentage(%)
Mild (0 – 7)	5	10.4
Moderate (8 – 19)	20	41.7
Severel (20 – 35)	23	47.9
Total	48	100

Table 2 shows IPSS scores found in respondents according to the severity of LUTS in BPH patients at Raden Mattaher Hospital, Jambi. BPH patients with the most LUTS complaints were severe level, which was 23 respondents (47.9%).

Table 3. Distribution of IIEF-5 Scores in BPH Patients with Erectile Dysfunction.

Degree of Erectile Dysfunction	Frequency	(%)
Normal (≥ 22)	9	18.8
Mild (17 – 21)	5	10.4
Mild to moderate (12 – 16)	5	10.4
Moderate (8 – 11)	4	8.3
Severe (1 – 7)	25	52.1
Total	48	100

Table 3 shows IEF-5 scores found in respondents according to the severity of erectile dysfunction in BPH patients at Raden Mattaher Hospital Jambi. In the table, there were respondents who still had normal erectile function, which was around 18.8%. Meanwhile, most of the BPH patients at Raden Mattaher Hospital Jambi that experienced

the highest erectile dysfunction was in severe level, which was 25 respondents (52.1%).

Table 4. Distribution of Comorbid Disease in BPH Patients with Erectile Dysfunction.

Comorbid Disease	Frequency	(%)
There are comorbidities		
- Diabetes Mellitus	5	10.4
- Hypertension	4	8.3
- Stroke	1	2.1
- >1 <i>comorbid disease</i>	3	6.3
No comorbidities	35	72.9
Total	48	100

Table 4 shows that there were comorbid diseases consisting of diabetes mellitus, hypertension, stroke, and more than one comorbid disease in BPH patients with erectile dysfunction at Raden Mattaher Hospital Jambi, which was 13 respondents (27.1%), and 35 other respondents (72.9%) had no comorbid disease.

Table 5 describes the history of comorbid disease with erectile dysfunction. The result of Fisher's statistical test ($p=1,000$) was $p\text{-value} > 0.05$, which means that there was no statistically significant correlation between comorbid disease in BPH patients and erectile dysfunction at Raden Mattaher Hospital Jambi.

Table 6 shows that the result of the Spearman correlation test ($r=-0.669$; $p=0.000$) was $p\text{-value} < 0.05$, which means that there was a

Table 5. Impact of Comorbid Disease on BPH Patients with Erectile Dysfunction.

Comorbid Disease	Status ED						p Value	
	ED				Non-ED			Total
	n	%	n	%	n	%		
There are comorbidities	11	84.6	2	15.4	13	100	1.000	
No comorbidities	28	80	7	20	35	100		

Table 6. Correlation of LUTS Complaints in BPH Patients with Erectile Dysfunction.

LUTS	Status ED												P Value	r Value
	Normal		Mild		Mild to Moderate		Moderate		Severe		Total			
	n	%	n	%	n	%	n	%	n	%	n	%		
Mild	3	60	1	20	0	0	0	0	1	20	5	100	0.000	-0.669
Moderate	5	25	3	15	5	25	2	10	5	25	20	100		
Severe	1	4.3	1	4.3	0	0	2	8.7	19	82.6	23	100		

statistically significant relationship between Lower Urinary Tract Symptom (LUTS) complaints in BPH patients and erectile dysfunction at Raden Mattaher Hospital Jambi. It was found that the correlation coefficient was ($r=-0.669$), which means the correlation is strong, and the direction of the correlation is negative. Therefore, the correlation of the two variables is not unidirectional, which means that the higher the IPSS score (the more severe level of LUTS), the smaller the IIEF-5 score (the more severe level of erectile dysfunction).

DISCUSSION

Benign Prostatic Hyperplasia (BPH) is a degenerative disease, which can cause physiological disorders in the body of elderly men. The clinical manifestations of BPH are caused by proliferation or hyperplasia on the transition zone prostate tissue that causes obstruction of the urinary tract and causes LUTS complaints. BPH patients have a close correlation to erectile dysfunction. According to a study, BPH patients over 50 years old had a higher risk of erectile dysfunction.⁷ The study of the Multinational Survey of the Aging Male (MSAM-7) evaluated the results of 12,815 men in the United States and in 6 European countries, between 50-80 years old.

This study investigated the correlation between age with LUTS symptoms and diseases related to erectile dysfunction. The results showed that there was a significant correlation between sexual disorders with age and the severity of LUTS.⁶ Based on the results of the study conducted at the Surgical Ward and Surgical Polyclinic of Raden Mattaher Hospital Jambi on 48 BPH patients with LUTS complaints in Table 1, it was found that most of the research respondents were 60-69 years old, which were 24 respondents (50%), and the second was 70-79 years old, which were 15 respondents (31.3%). This is not much different from research conducted by Fitriyana N, et al (2014) at the Urology Clinic of RSUP Arifin Achmad, Riau Province, which found that age range of 60-69 years old were 23 respondents (38.3%) of 60 BPH patients, and the second was in 70-79 years old, which were 17 respondents (28.8%).⁸

The determination of the BPH level used the IPSS score, which was suggested by the World Health Organization (WHO). The grouping of scores in the form of LUTS complaints was divided into three levels, in which score 0-7 was mild level, 8-19

was moderate level, and 20-35 was severe level.¹

The distribution of the frequency for BPH patients with LUTS complaints using the IPSS questionnaire in the Surgical Ward and Surgical Polyclinic of Raden Mattaher Hospital Jambi, in Table 2 found that the LUTS level in BPH patients was mostly in severe level of 23 respondents (47.9%). Similar to the research conducted at the Surgical Clinic of RSUP. Prof. Dr. R. D Kandou, it was obtained that the highest IPSS score with a severe level was 16 respondents (53.3%) of 30 BPH patients.¹ The phenomenon for the high incidence of BPH patients with severe LUTS complaints was because these BPH patients will come to seek medical treatment if the symptoms have been very disturbing and getting severe.¹

Erectile dysfunction is defined as the inability to achieve and maintain an adequate erection for sexual intercourse and its prevalence increases together with the increase of age.⁹ Erectile dysfunction is the most common sexual function problem in BPH patients.⁶

To identify ED, the IIEF-5 questionnaire was used, which consisted of five questions, and each question was given a score of 0-5. The level of erectile dysfunction was divided into five levels, score ≥ 22 means no dysfunction, 17-21 is mild dysfunction, 12-16 is mild to moderate dysfunction, 8-11 means moderate dysfunction, and 1-7 is severe dysfunction.⁸

The distribution of the frequency for BPH patients with LUTS complaints who experienced ED using the IIEF-5 questionnaire at the Surgical Ward and Surgery Polyclinic of Raden Mattaher Hospital Jambi in table 3 found that most BPH patients experienced erectile dysfunction, and the most was a severe erectile dysfunction, which was 25 respondents (52.1%). This study was not much different from the study by Fitriyana N, et al (2014), which stated that BPH patients who experienced erectile dysfunction at the Urology Clinic of Arifin Achmad Hospital Riau were 90%, and 40% of BPH patients had severe erectile dysfunction.⁸

Comorbid diseases such as diabetes mellitus, hypertension, and stroke were also considered to have an important role in erectile dysfunction in BPH patients.⁷ The results of the study conducted at Raden Mattaher Hospital Jambi, in table 4, found that patients with the comorbid disease were 13 respondents (27.1%), and table 5 showed that Fisher's statistical test obtained statistically insignificant results ($p=1.000$) with a

p-value > 0.05 which means that there was no correlation between comorbid disease and erectile dysfunction in BPH patients at Raden Mattaher Hospital Jambi.

The results of this study are in accordance with the study conducted by Vitriani I and Duarsa G (2018) at Sanglah Hospital, which showed that there was no correlation between diabetes mellitus ($p=0.504$) and hypertension ($p=0.116$) with erectile dysfunction in BPH patients.⁷ However, this was different from the literature study explaining several studies regarding the correlation between diabetes mellitus and erectile dysfunction.¹⁰

The absence of a correlation between comorbid diseases in BPH patients and erectile dysfunction can be caused by the small number of populations who have a comorbid disease. Furthermore, there were other risk factors affecting erectile dysfunction, such as psychogenic factors and organic factors.¹¹

Hypothesis tests for the correlation between LUTS complaints in BPH patients and erectile dysfunction used correlation statistical test of the Spearman Rank, in which both variables were ordinal. Table 4.6 shows that there was a significant correlation between complaints of Lower Urinary Tract Symptom (LUTS) in BPH patients and erectile dysfunction at Raden Mattaher Hospital Jambi ($p=0.000$). The correlation coefficient value was ($r = -0.669$), which means the correlation between LUTS complaints in BPH patients and erectile dysfunction was strongly correlated, and the direction of the correlation was negative. Thus, the correlation between the two variables was not unidirectional, which means the higher the IPSS score (the more severe level of LUTS), the lower the IIEF-5 score (the more severe level of erectile dysfunction).

This study is also in accordance with the study conducted by Kardasevic A and Milicevic S (2017) using the Spearman correlation test, which obtained a significant ($p=0.000$) and strong correlation ($r=-0.760$) with negative direction.⁶

Sexual or erection problems are still seen as a taboo for people in Indonesia. By understanding the correlation between LUTS complaints in BPH patients and erectile dysfunction, it can be a reference for screening sexual function, especially erectile function using the IIEF-5 questionnaire in patients with LUTS/BPH. The initial screening is expected to detect erectile dysfunction in BPH patients and allow for earlier treatment, so it is expected to improve the patient's quality of life.⁸

CONCLUSION

Based on the results of data analysis in research conducted at Raden Mattaher Hospital Jambi, it can be concluded that the patient profile based on age is mostly in the 60-69 year old categories. The highest degree of LUTS and erectile dysfunction was the severe degree. Statistically, there is no effect of comorbid disease in patients with Benign Prostatic Hyperplasia (BPH) with erectile dysfunction at Raden Mattaher Hospital Jambi, and there is a significant relationship between complaints of Lower Urinary Tract Symptom (LUTS) in patients with Benign Prostatic Hyperplasia (BPH) and erectile dysfunction in Raden Mattaher Hospital.

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