RELATIONSHIP BETWEEN RISK FACTORS AND LENGTH OF STAY OF PATIENTS AFTER OPEN PROSTATECTOMY AT RSU NEGARA IN 2023: A CROSS-SECTIONAL STUDY

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ABSTRACT

Introduction: *Open prostatectomy (OP) remains an important treatment for benign prostatic hyperplasia (BPH) in resource-limited settings. OP was routinely performed for BPH patients in 2023 at RSU Negara.* ***Objective:*** *This study aims to determine the relationship between risk factors of the patients and the length of stay after open prostatectomy in all patients with BPH underwent OP at RSU Negara during 2023.* ***Material & Methods:*** *All patients with BPH who had undergone open prostatectomy at RSU Negara during 2023 with complete medical records were recruited using a consecutive sampling method. Associations between variables were analyzed using Chi-square and Fischer exact test. P<0.05 (95% CI) was considered significant.* ***Results:*** *A total of 26 patients were recruited in this study. The average LOS was 7.6 days. The shortest LOS was 6 days and the longest was 12 days. Age (p=0.257), hypertension (p=0.051), volume of bleeding (p=0.427), and duration of surgery (p=1.00) did not indicate any significant association with hospital LOS.* ***Conclusion:*** *Risk factors such as age, hypertension, volume of bleeding during surgery, and duration of surgery did not have any significant association with the length of stay after open prostatectomy in BPH.*

Keywords: *Benign prostate hyperplasia, open prostatectomy, length of stay.*

ABSTRAK

Pendahuluan: *Prostatektomi terbuka (OP) tetap menjadi metode penanganan penting untuk hiperplasia prostat jinak (BPH) di lingkungan dengan keterbatasan sumberdaya. OP secara rutin dilakukan terhadap pasien BPH pada tahun 2023 di RSU Negara.* ***Tujuan:*** *Penelitian ini bertujuan untuk mengetahui hubungan faktor risiko pasien dengan lama rawat inap pasca prostatektomi terbuka pada seluruh pasien BPH yang menjalani OP di RSU Negara selama tahun 2023.* ***Bahan & Cara:*** *Seluruh pasien BPH yang menjalani prostatektomi terbuka di RSU Negara selama tahun 2023 dengan rekam medis yang lengkap, direkrut dengan metode konsekutif sampling. Hubungan antar variabel dianalisis menggunakan uji Chi-square dan Fischer. P<0,05 (95% CI) dianggap signifikan.* ***Hasil:*** *Sebanyak 26 pasien direkrut dalam penelitian ini. Rata-rata lama rawat inap adalah 7,6 hari. Lama rawat inap terpendek 6 hari dan terlama 12 hari. Usia (p=0,257), hipertensi (p=0,051), volume perdarahan (p=0,427), dan durasi operasi (p=1,00) tidak menunjukkan adanya hubungan yang signifikan dengan lama rawat inap di rumah sakit.* ***Simpulan****: Faktor risiko seperti usia, hipertensi, volume perdarahan saat operasi, dan lama operasi tidak mempunyai hubungan yang signifikan dengan lama rawat inap pasca prostatektomi terbuka pada BPH.*

Kata kunci: *Benign prostate hyperplasia, prostatektomi terbuka, lama rawat inap.*

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INTRODUCTION

When minimally invasive treatment is not successful for benign prostate hyperplasia (BPH), there are two methods that can be done, namely Transurethral Resection of Prostate (TURP) and Open Prostatectomy (OP).OP remains a relatively common procedure for treating BPH in developing countries.[1,2] Open prostatectomy also become a common choice in Indonesia where resources are limited, although the exact percentage of BPH patients undergoing OP was difficult to mention.

Treatment for BPH depends on the patient's age and condition, prostate size, and the severity of symptoms. However, at RSU Negara, all patients with BPH were managed with OP due to the absence of urologist. Then, patients with BPH who were operated on with OP during 2023 had a varied length of stay (LOS).

OBJECTIVE

The aim of this study was to determine the relationship between risk factors of the patients and the length of stay after open prostatectomy in all patients with BPH underwent OP at RSU Negara during 2023.

MATERIAL&METHODS

This study was an unpaired categorical analytic study using a cross-sectional approach. All patients with BPH who had undergone open prostatectomy at RSU Negara during 2023 with complete medical records were recruited using a consecutive sampling method.

Data was descriptively analyzed using a univariate test. The risk factors studied were age, hypertension, volume of bleeding during surgery, and duration of surgery and its relationship with length of stay. Associations between variables were analyzed using Chi-square and Fischer exact test. All data analysis was performed in SPSS version 24.0. A $p<0.05$ was considered significant.

RESULTS

A total of 26 patients were recruited in this study. 53.8% (n=14) of respondents were >65 yo. Hypertension was found in 42.3% (n=11) of respondents. Bleeding of >500 ml was experienced by 50% (n=13) of respondents. 50% (n=13) of respondents underwent >100 minutes of surgery. The average LOS was 7.6 days. The shortest LOS was 6 days and the longest was 12 days. Meanwhile, LOS of >8 days was found in 42.3% (n=11) of respondents. Descriptive analysis is displayed in Table 1.

Table 2 shows the data analysis between variables. LOS was categorized into <8 days and

Table 1. Demographic Data of Respondents.

Variables	Categoric	Percentage (%) (n)
Age	<65 yo	46% (12)
	>65 yo	54% (14)
Hypertension	No	58% (15)
	Yes	42% (11)
Bleeding volume	<500 ml	50% (13)
	>500 ml	50% (13)
Duration of surgery	<100 minutes	50% (13)
	>100 minutes	50% (13)

Table 2. Chi-Square Analysis between Risk Factors and Length of Stay After Open Prostatectomy.

Risk Factors		Length of Stay		P
		<8 days	>8 days	
Bleeding volume	<500 ml	9 (34.6%)	4 (15.4%)	0.427
	>500 ml	6 (23.1%)	7 (26.9%)	
HT	No	6 (23.1%)	9 (34.6%)	0.051
	Yes	9 (34.6%)	2 (7.7%)	
Age	<65 yo	5 (19.2%)	7 (26.9%)	0.257
	>65 yo	10 (38.5%)	4 (15.4%)	
Duration of surgery	<100 Minutes	7 (26.9%)	6 (23.1%)	1.000
	>100 Minutes	8 (30.8%)	5 (19.2%)	

>8 days. All the risk factors such as age (p=0.257), hypertension (p=0.051), volume of bleeding (p=0.427), and duration of surgery (p=1.00) did not indicate any significant association with hospital LOS after open prostatectomy.

DISCUSSION

In a meta-analysis,[3] it was stated that OP had some disadvantages over newer minimally invasive procedures including a longer LOS after OP. Our study found an average LOS of 7.6 days. It was shorter than average LOS in other study by Ofoha, et al.,[4] with average LOS of 9.6 days but it was nearly similar with the average LOS in a study by Obi, et al,[2] which was 7.9 days.

Our study revealed that risk factors such as age, hypertension, bleeding volume during surgery, and duration of surgery did not significantly associate with LOS. Contradictory to our study, a study by Strother, et al,[5] mentioned age and operative time as significant predictors of prolonged LOS. Older age and longer surgery duration were probably related to surgical complication that eventually result in extended hospital stay.

Several studies mentioned the possibility that the extended hospital LOS was caused by complication of invasive procedure such as OP.1,4 Thus, our study has several drawbacks for not analyzing the method of surgery and the post-operative complications such as wound infection, post-operative incontinence due to the damage of external sphincter, deep vein thrombosis, etc.

CONCLUSION

Based on the results, it can be concluded that risk factors such as age, hypertension, volume of bleeding during surgery, and duration of surgery did not have any significant association with the length of stay of patients with BPH underwent open prostatectomy at RSU Negara during 2023.

This research could further be developed by increasing the sample size and analyzing other factors of surgery such as the method of surgery and post-operative complications.

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