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THE EFFECTS OF CLINICAL PATHWAY OF ROBOT-ASSISTED LAPAROSCOPIC RADICAL PROSTATECTOMY IN PROSTATE CANCER PATIENTS

Hypothesis / aims of study

The aims of this study were to examine the effects of applying standardized clinical pathway (CP) on postoperative outcomes, as well as the medical expenses for patients undergoing robot-assisted laparoscopic radical prostatectomy (RALP).

Study design, materials and methods

A prospective study was conducted at a single institution. A total of 104 patients participated in this study, and half of them received nursing care based on CP (CP group) while others received traditional care (non-CP group). Patients with bladder cancer, emergency surgery, and preoperative stage 4 of prostate cancer were excluded from this study. Patients who had other operations, together with RALP, were also excluded. Data was collected from November 1, 2016 to February 28, 2017. To compare operative and postoperative outcomes and medical expenses between CP and non-CP groups, Chi-square test and t-test were performed using SPSS (version 24.0).

Results

Participants' demographics, such as age and body mass index (BMI), were not significantly different between CP and non-CP groups. No significant differences were observed in disease-related characteristics such as preoperative prostate volume, Gleason score, TNM state, console time, operation time, estimated blood loss, and lymph node dissection between the two groups. In contrast, tumor volume was significantly greater in CP group compared to non-CP group (3.90 ± 6.52, 2.63±3.10, respectively, p= .037). Regarding the comparison of postoperative outcomes and medical expenses between the two groups, CP group had significantly lower length of postoperative hospital stay (p < .001), pain score at discharge (p= .007), and medical expenses (p= .004) compared to non-CP group. Similarly, CP group had earlier date of gas passing compared with non-CP group (p < .001); however, the number of patients visiting emergency department within 30 days after discharge was not significantly different between the two groups.

Interpretation of results

Shorter hospital stay shown in CP group can be an important outcome for both patients and hospitals, as it could mean rapid recovery from surgery for patients and increase in profit from fast bed turnover rate for hospitals. In addition, the lack of difference in the number of patients visiting emergency department within 30 days after discharge between these two groups indicates that the recovery rates for one month were similar in CP and non-CP groups.

Concluding message

The CP application after RALP could help improve postoperative outcomes of patients, while also reducing medical expenses. To validate our results, more studies including large samples are needed.

Table 1. Demographics and disease-related characteristics between CP and non-CP groups

		CP group (n=52) Mean±SD or N (%)	Non-CP group (n=52) Mean±SD or N (%)	t or X^2	p
Age		63.21±8.67	64.62±8.53	0.832	0.407
Body Mass Index		24.20±2.67	24.94±2.73	1.397	0.165
Estimated blood loss (ml)		340.962±282.31	240.043±194.49	1.369	0.108
Prostate volume		26.731±9.610	24.769±9.262	1.060	0.108
Tumor volume		3.900±6.523	2.627±3.101	1.271	0.037
Gleason score		7.308±0.960	7.577±0.914	-1.463	0.146
TNM stage		2.423±0.498	2.385±0.491	0.396	0.438
CCI		5.250±1.355	5.442±1.127	-0.786	0.433
CDC		1.058±0.235	1.096±0.297	-0.731	0.467
Consol time		36.673±16.271	37.192±12.040	-0.185	0.854
Operation time		105.712±99.462	35.422±26.364	1.021	0.692
Co-morbidity	Yes	19 (36.5%)	25 (48.1%)	1.418	0.321
	No	33 (63.5%)	27 (51.9%)		
LN dissection	Yes	10	12	0.231	0.631
	No	42	40		

TNM: Tumor Node Metastasis, CCI: Clear Communication Inex, CDC: Centers for Disease Control, LN: lymph node

Table 2. Comparisons of postoperative outcomes in CP and non-CP groups

	CP group (n=52) Mean±SD or N (%)	Non-CP group (n=52) Mean±SD or N (%)	t or X^2	p
Length of hospital stay (days)	4.24±0.32	6.92±4.24	4.75	<0.001
Total medical expense (USD)	7,838.01 ±414.77	8,063.16 ±1,323.51	1.17	0.004
Pain score at discharge	1.37±0.86	1.40±1.22	0.37	0.007
Gas passing day	1.64±0.56	2.51±0.57	7.926	<0.001
Emergency department visits (within 30 days)	3 (2.9%)	5(4.8%)	0.542	0.462

References

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