

Original Article

The improvement strategies of psychological intervention nursing on the anxiety and living quality of patients with gynecologic malignancies during postoperative chemotherapy

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Abstract: Objective: To explore the effect of psychological intervention on the anxiety and living quality of patients with gynecologic malignancies during postoperative chemotherapy. Methods: A total of 100 patients with gynecologic malignancies admitted to our hospital were selected as the study subjects. They were randomly included in study group and received routine nursing combined with psychological intervention (n=50), but the control group received only routine nursing (n=50). Self-rating depression scale (SDS) and self-rating anxiety scale (SAS) scores were compared before treatment (T0), 1 week after treatment (T1), 1 month after treatment (T2), and 2 months after treatment (T3). The heart rates of the two groups were recorded. After the treatment, a nursing satisfaction survey was performed among the patients. A 5-year prognostic follow-up and the 5-year overall survival rates of the two groups were recorded. Results: At T1, T2 and T3, the SDS and SAS scores of the study group were lower than those of the control group ($P < 0.001$). The heart rates at T2 and T3 were lower in study group than in the control group ($P < 0.001$). The nursing satisfaction of the study group was higher than the satisfaction (64.00%) of the control group ($P < 0.001$). In terms of symptoms, the pain and insomnia scores of the study group were lower than those of the control group ($P < 0.001$). In terms of functional areas, the emotional function, role function, and physical function of the study group were higher than those of the control group ($P < 0.001$). The 5-year overall survival rate showed no difference between the two groups ($P > 0.050$). Conclusion: Psychological intervention nursing can effectively improve the psychological conditions of patients with gynecologic malignancies during postoperative chemotherapy, and enhance their quality of life.

Keywords: Psychological intervention, gynecological malignancy, mood, quality of life

Introduction

Gynecological malignancy is a common tumor worldwide and is more common in middle-aged and elderly people [1]. Cervical cancer, fallopian tube tumors, endometrial cancer, etc. are the main types of gynecological malignancies. Of these, the prevalence rate of cervical cancer is the highest [2]. In recent years, studies have shown that with the improvement of people's living standards and the changes in lifestyle, the prevalence rate of gynecological malignancy is increasing yearly [3, 4]. Moreover, gynecological malignancy is more harmful to the human body. According to statistics, in 2018, 22,240 patients were diagnosed with ovarian cancer and 14,070 patients died in the United

States [5]. The study of Bray et al. [6] showed that the mortality rate of cervical cancer ranked fourth among all malignant tumors. At present, the clinical challenges of gynecological malignancy are becoming more and more severe. Researchers at home and abroad have been working hard to effectively diagnose and treat gynecological malignancies and to improve the prognosis of patients. However, no significant breakthrough has been made yet. The current clinical treatment method of gynecological malignancy is still focused on chemoradiotherapy and surgery. Although chemotherapy has a good therapeutic effect on tumors, its toxic side effects generally occur during the treatment. In addition, the long treatment cycle will also cause patients much pain [7, 8]. Some data

show that the patients' psychological resistance during the chemotherapy process is gradually increasing. This not only greatly increases the occurrence of doctor-patient disputes, but it also reduces the rehabilitation effect of patients [9]. Therefore, during the process of chemotherapy, it is necessary to constantly understand the patients' psychological conditions, provide patients with timely psychological counseling and intervention, and improve the benefits of treatment [10, 11]. Studies have shown that the use of psychological intervention in lung cancer patients can effectively improve their clinical efficacy and immune function [12]. Fu et al. [13] said that psychological intervention can improve the prognosis of patients. However, there are still few studies on the application of psychological intervention care provided to the patients with gynecological malignancies during chemotherapy process. There is still controversy over the nursing measures for such patients in clinical practice. Therefore, this study provides a reliable reference and guidance for future clinical practice by analyzing the value of psychological intervention care in gynecological malignancy.

Materials and methods

General information

100 patients with gynecologic malignancies admitted to Tengzhou Central People's Hospital from January 2012 to April 2013 were selected as subjects. The age range was 36-69 years, with an average age of (52.6±8.67) years. Using a random number table, the patients were divided into the study group which combined routine nursing with psychological intervention (n=50) and the control group with only routine nursing (n=50). This experiment was approved by the Ethics Committee of our hospital, and all the above subjects signed an informed consent.

Inclusion and exclusion criteria

Inclusion criteria: patients diagnosed with a gynecological malignant tumor by pathology biopsy in our hospital; patients with tumor resection surgery, postoperative chemotherapy, age of 20 to 70 years old, complete medical records, and willing to cooperate with our hospital staff. **Exclusion criteria:** patients with combined multiple tumors; patients who underwent chemoradiotherapy in the previous three months; patients with surgical contraindications; patients with other combined cardiovas-

cular and cerebrovascular diseases, autoimmune diseases, organ failure, liver and kidney dysfunction, etc.

Methods

All patients were treated with a tumor-related resection or excision surgery in our hospital. The operation was performed by a senior gynecologist at our hospital. All patients were treated with chemotherapy after surgery.

The control group received nursing as follows. The basic knowledge related to the tumor and the precautions during the rehabilitation process should be taught to patients. The vital signs of the patient should be regularly checked. The ward should be clean and tidy.

The study group additionally received psychological intervention as follows: 1. A good communication relationship with the patient should be proactively established. The successful treatment case should be introduced to the patients. 2. The patient's psychological counseling work should be strengthened. In order to provide patients with help, hints and encouragement, their needs during the treatment should be patiently and peacefully asked. For psychological problems that cannot be solved, the attending physician should be turned to in a timely manner. 3. Relaxed music or videos can be played in the ward; green plants can be planted to build a good ward environment. 4. Safety education and the communication among the patients should be strengthened; a warm therapeutic environment should be created. 5. Communication with the family members should be actively carried out. Family members should cooperate with the nursing work to encourage the patient. The precautions and contraindications during the rehabilitation process should be introduced to the patient.

Outcome measures

SDS and SAS scores: The SDS and SAS scores were measured in two groups before treatment (T0), 1 week after treatment (T1), 1 month after treatment (T2), and 2 months after treatment (T3).

Patient satisfaction: The patient satisfaction survey (percentage system) was scored based on the study of Merkouris et al. [14]. According to the score, the survey results were divided into quite satisfactory (score ≥ 90 points), satisfactory (score ≥ 70 points), need to be improved (scores ≥ 50 points) and dissatisfactory (scores

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Table 1. Comparison of the clinical data [n (%)]

	Study group (n=50)	Control group (n=50)	t or χ^2	P
Age	53.2±8.51	52.9±9.03	0.171	0.865
BMI (KG/cm ²)	21.86±4.72	22.09±5.02	0.236	0.814
Operation time (min)	3.04±0.52	2.98±0.74	0.469	0.640
Arterial pressure (mmHg)	89.12±8.04	90.77±9.15	0.958	0.341
Chemotherapy cycle (month)	2.87±0.84	2.95±0.68	0.523	0.602
Heart rate (time/min)	76.52±8.25	75.83±9.06	0.398	0.691
Tumor type			0.194	0.996
Ovarian cancer	15 (30.00)	14 (28.00)		
Endometrial cancer	12 (24.00)	13 (26.00)		
Cervical cancer	9 (16.00)	10 (20.00)		
Uterine fibroids	8 (16.00)	7 (14.00)		
Other	6 (12.00)	6 (12.00)		
Pathological stage			0.444	0.505
I~II	6 (12.00)	4 (8.00)		
III~IV	44 (88.00)	46 (92.00)		
Degree of differentiation			1.878	0.391
Low	37 (74.00)	35 (70.00)		
Medium	10 (20.00)	8 (16.00)		
High	3 (6.00)	7 (14.00)		
Lymphatic metastasis			0.233	0.629
Yes	12 (24.00)	10 (20.00)		
No	38 (76.00)	40 (80.00)		
Marital status			0.047	0.829
Married	35 (70.00)	34 (68.00)		
Unmarried	15 (30.00)	16 (32.00)		
Fertility status			0.170	0.680
Yes	32 (64.00)	30 (60.00)		
No	18 (36.00)	20 (40.00)		
Smoking			0.644	0.422
Yes	21 (42.00)	25 (50.00)		
No	29 (58.00)	25 (50.00)		
Education level			0.386	0.534
≤ high school	17 (34.00)	20 (40.00)		
> high school	33 (66.00)	30 (60.00)		

< 50 points). The patient nursing satisfaction (score results of quite satisfactory and satisfactory/total number × 100%) was calculated.

Symptom assessment: The patients were surveyed using the EORTC-QLQ-C30 [15], and the scores of each field were converted to a standard score of 0 to 100 with max-min string formula. The results were divided into symptom areas (fatigue, pain, nausea, insomnia). Higher scores indicated more serious symptoms whereas higher scores indicated better body func-

tion. A 5-year prognostic follow-up and 5-year overall survival rate of the two groups were recorded.

Statistical analysis

All the experimental results were statistically calculated using SPSS 24.0 statistical software (Beijing Strong-vinda Information Technology Co., Ltd.). All the graphs were drawn using Graphpad 8 (Shenzhen Tianruiqi Software Technology Co., Ltd.) software. The enumeration data, such as the patient's disease type, were expressed in the form of (rate) and compared with a chi-square test. The measurement data, such as SDS and SAS scores were expressed in the form of (mean ± standard deviation) and compared with a t test; Repeated measurements using ANOVA with a hoc post Bonferroni test were used for comparison at multiple time points. Survival rates were calculated with the Kaplan-Meier estimator and compared using a log-rank test. $P < 0.050$ was statistically significant.

Results

Baseline data summary

There were no differences in age, BMI, operation time, arterial pressure, heart rate, chemotherapy cycle, tumor type, pathological stage, degree of differentiation, lymphatic metastasis, marital status, fertility status, smoking, or education level between the two groups ($P > 0.050$) (Table 1).

The study group showed lower SDS, SAS scores

There were no dramatic differences in the SDS and SAS scores between the two groups at T0 ($P > 0.050$).

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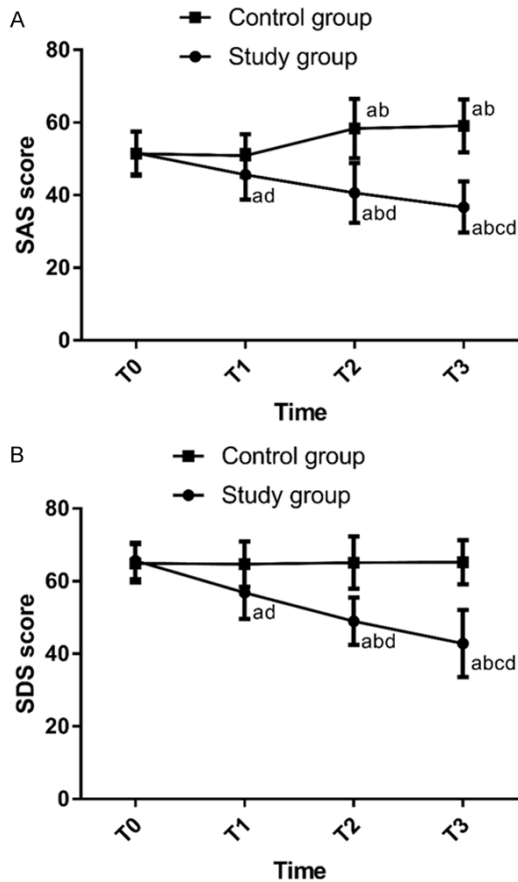


Figure 1. Comparison of SAS scores between the two groups of patients. A. a, b, c, represent a comparison with the SAS score of the same group at T0, T1 and T2, respectively. $P < 0.001$; d, represents a comparison with the SAS score of the control group at the same period, $P < 0.001$. B. a, b, c, represents a comparison with the SDS score of the same group at T0, T1 and T2, respectively. $P < 0.001$; d, represents a comparison with the SDS score of the control group at the same period.

The study group showed lower SDS and SAS scores at T1, T2, and T3 than the control group ($P < 0.001$). The SDS and SAS scores of the study group decreased gradually from T1. The value was the lowest at T4 ($P < 0.001$), but the SDS scores at T0, T1, T2 and T3 in the control group were not remarkably different ($P > 0.050$). The SAS scores between T0 and T1 were not remarkably different ($P > 0.050$), but they increased at T2 ($P < 0.001$). ($P > 0.050$) (Figure 1).

The study group showed a lower heart rate

The heart rates of the study group at T2 and T3 were lower than they were in the control group ($P < 0.001$) (Figure 2).

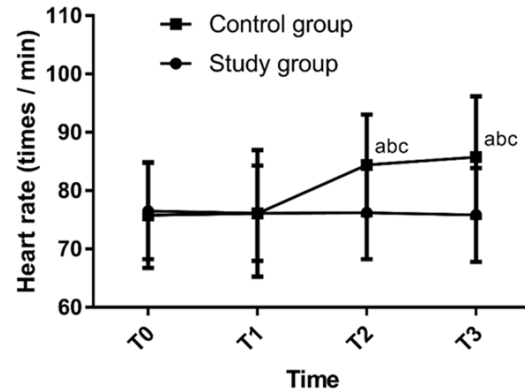


Figure 2. Comparison of heart rate between the two groups. a, represents a comparison with the heart rate of the same group at T0, $P < 0.001$; b, a comparison with the heart rate of the same group at T1, $P < 0.001$; c, represents a comparison with the heart rate of the control group at the same period, $P < 0.001$.

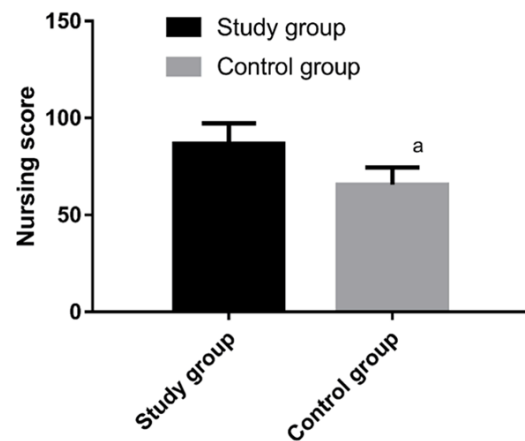


Figure 3. Comparison of heart rate between the two groups. a, represents a comparison with the nursing score of the study group, $P < 0.001$.

The study group showed higher nursing satisfaction

The study group exhibited higher nursing satisfaction than the control group (Figure 3; Table 2).

Quality of life comparison

In terms of symptom area, there was no dramatic difference in fatigue or nausea between the two groups ($P > 0.050$), but the pain and insomnia scores in the study group were lower than those in the control group ($P < 0.001$). In terms of functional areas, there was no remarkable difference in cognitive function or social

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Table 2. Comparison of nursing satisfaction [n (%)]

	Study group (n=50)	Control group (n=50)	χ^2	<i>P</i>
Quite satisfactory	27 (54.00)	6 (12.00)	19.952	< 0.001
Satisfactory	15 (30.00)	26 (52.00)	5.002	0.025
Need to be improved	7 (14.00)	9 (18.00)	0.298	0.585
Dissatisfactory	1 (2.00)	9 (18.00)	7.111	0.008
Satisfaction degree (%)	84.00	64.00	5.198	0.023

Table 3. Comparison of the quality of life

	Study group (n=50)	Control group (n=50)	χ^2	<i>P</i>
Fatigue	15.14±3.85	15.87±4.05	0.924	0.358
Pain	24.14±5.18	29.81±6.92	4.638	< 0.001
Nausea	13.47±2.94	14.15±3.08	1.129	0.262
Insomnia	18.60±5.54	27.24±6.39	7.224	< 0.001
Functional areas	77.82±5.20	76.84±6.82	0.808	0.421
Cognitive function	62.19±8.04	50.17±9.12	6.991	< 0.001
Social function	69.05±7.24	68.19±8.05	0.562	0.576
Role function	56.93±5.07	45.36±8.15	8.524	< 0.001
Physical function	69.11±8.27	55.93±5.80	9.226	< 0.001

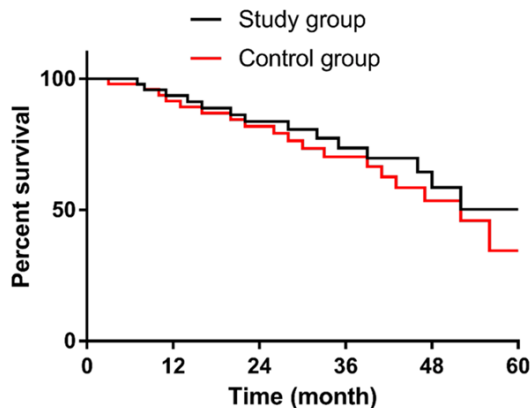


Figure 4. Prognosis survival curves of the two groups of patients. There was no significant difference in the 5-year overall survival rate between the two groups ($P > 0.050$).

function in the study group ($P > 0.050$). However, the study group scored higher in the emotional function, role function and physical function than the control group ($P < 0.001$) (Table 3).

The two groups and their survival rates

The two groups showed no significant differences in terms of 5-year overall survival ($P > 0.050$) (Figure 4).

Discussions

At present, malignant tumors in clinical practice pose a great threat to the life and health of patients. Moreover, the negative psychology that appears during the rehabilitation process has gradually become a difficult problem [16-18]. Gynecological malignancies occur mostly in the reproductive organs [19, 20]. In the therapeutic process, it is necessary to remove related organ tissues. The prognosis has a greater impact on women's lives. According to some data, some women have lost the normal life between husband and wife due to the removal of related tissues in genital tumors. The family atmosphere is affected [21]. Therefore, such patients not only need to bear the pain caused by tumor, but also have to accept the negative effects, fear, and worry during the treatment.

At this time, the negative emotions may completely occupy the patient's thoughts. It is not conducive to the treatment or the patient's prognosis.

At present, Xiao et al. [22] has applied psychological intervention to patients with brain tumors. Good results have been achieved. However, only the psychological states of patients and their families were investigated in the study of Xiao et al. A more comprehensive analysis was not conducted. In order to improve this aspect, in this experiment, the SDS score, SAS score, nursing satisfaction, quality of life and patient prognoses were compared between the psychological intervention nursing and routine nursing groups. The application value of psychological intervention care in gynecological malignant tumors was further confirmed. In the future, it will be of great significance to the diagnosis and treatment of gynecological malignancies.

The results of this experiment showed that the SDS score, SAS score, nursing satisfaction and quality of life scores of the study group were better than that of the control group, respectively. This is consistent with the study results of Cheng et al. [23], which supports the results

of this experiment. It is assumed that the key to the difference between the two groups is caused by the difference in the patient's psychological state. Studies have shown that a good mentality has a positive effect on the rehabilitation and prognosis of patients during the treatment of any disease [24, 25]. In this experiment, the results of the SDS and SAS scores of the patients with psychological intervention care in the study group were better than those in the control group. It indicated that the psychological state of the patients was dramatically improved by psychological intervention. Continuous encouragement and suggestion can reduce patients' negative psychology, such as agitation and anxiety. A positive attitude also helps improve their confidence in overcoming the disease. By observing the heart rate of the two groups of patients, it was found that the heart rate of the patients in the study group remained in a relatively steady state. It also indicated that the patients in the study group were more peaceful during the treatment. Subsequently, huge changes of heart rate will not occur due to nervousness, anger and other emotions. It further suggests that patients in the study group are less likely to have oxidative stress, which is also very helpful in reducing the incidence of adverse reactions. Similarly, the study of Whalley et al. [26] showed that the application of psychological intervention care has a good effect on the stability of the patient's heart rate, which can support the results of this experiment. In addition, through active communication and instruction with patients, patients will have a certain understanding of the basic situation of their own diseases. The unknown fear of disease will also be reduced. Moreover, secondary damage due to the lack of medical common sense during the process of rehabilitation and prognosis is avoided. The communication between doctors and patients can strengthen patients' trust in the medical staff and improve treatment compliance, which is also conducive to the patients' rehabilitation. With psychological intervention, Matcham et al. [27] also achieved consistent results. The utility of psychological intervention for patients with cancer has been further demonstrated.

This experiment aimed to explore the application value of psychological intervention nursing by comparing the usage of psychological inter-

vention nursing and routine nursing in gynecological malignancy. However, due to the limited experimental conditions, there were still some shortcomings. For example, some rare diseases were not included in this study, and the statistical analysis of big data could not be performed due to the small size of the study cohorts. A longer-term follow-up survey on the subjects of this experiment will be conducted. In-depth analysis on the application of psychological intervention care will be carried out to obtain the best experimental results.

In summary, psychological intervention nursing can effectively improve the psychological conditions of patients with gynecologic malignancies during postoperative chemotherapy, and enhance their quality of life.

Disclosure of conflict of interest

None.

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