

The effect of psychological status on postoperative nutrition, immune function and life quality in elderly patients with gastric cancer.

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Abstract

Objective: Our objective is to explore the effect of psychological status on postoperative nutrition, immune function and life quality in elderly patients with gastric cancer.

Methods: 100 elderly patients with gastric cancer between September, 2012-November, 2014 were selected, and randomly divided into observation group and control group. There were 50 cases in the control group who received routine nursing treatment, and 50 cases in the observation group who received active psychological intervention based on routine nursing. Nutrition status, immune function and life quality in two groups before and after treatment were compared.

Results: Nutrition status, immune function and life quality were not different between the observation group and the control group before treatment ($P>0.05$); the body mass, body fat content and prealbumin in the observation group after treatment were not different from the control group ($P>0.05$); after treatment, the body protein content and albumin content in the observation group were higher than the control group, which were different ($P<0.05$); the number of CD3+, CD4+ and CD8+ cells in the observational group were significantly higher than the control group, which were different ($P<0.05$), the ratio of CD4+/CD8+ in the observation group was higher than the control group, however there was no significant difference ($P>0.05$); the QLQ-C30 questionnaire was used to evaluate the life quality, and the results showed that the social function of patients in the observation group after treatment was not different from the control group ($P>0.05$), however, the scores of physical function, cognitive function and emotional function were better than the control group, which were different ($P<0.05$).

Conclusion: The nutritional status, immune function and life quality can be significantly improved in elderly gastric cancer patients with positive psychological status, which is worthy of clinical promotion.

Keywords: Gastric cancer, Postoperative nutrition, Immune function, Life quality.

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Introduction

The morbidity of gastric cancer remains high among malignant cancers [1-3]. There are negative moods in gastric cancer patients such as fear, anxiety, disappointment and depression which can directly affect the intake of postoperative nutrition and life quality [4,5]. Thus, patients do not only need routine clinical treatment, but also should adjust the mental status, overcome adverse psychological reaction, and build a strong anticancer psychological defense. It is significant for intensifying postoperative nutrition, improving autoimmunity, and alleviating tumor progress.

By now, the clinical psychological nursing for gastric cancer patients has attracted wide attention [6-10]. In this study, the effects of psychological status on postoperative nutrition,

immune function and life quality in elderly patients with gastric cancer were explored.

Materials and Methods

General data

100 elderly patients with gastric cancer between September, 2012-November, 2014 were selected, and randomly divided into observation group and control group. The whole research was completed with the informed consent of patients, and it was approved by the Ethics Committee. There were 50 cases in the observation group with 36 male cases and 14 female cases, the age was 60-86 years and the average age was 67.56 ± 8.23 years. Education level: 6 cases of junior high school or below,

9 cases of senior high school or technical secondary school and 25 cases of junior college or above. The general data between two groups were not different ($P>0.05$), which was comparable.

Methods

Nursing intervention: The patients in the control group received routine nursing treatment and the patients in the observation group received active psychological intervention based on routine nursing. The medical record file was created since admission; first a good relation was built between medical personnel and patients, and different communication modes were administrated according to the patient conditions such as educational level, secondly the perspectives of patients were well understood and the psychological feelings were observed by transpositional consideration; we communicated with patients every day to adjust the psychological status, care and active psychological guidance were administrated timely to the patients, and we listened to the patients carefully to provide emotional support; during hospitalization, the patients were educated for the knowledge about gastric cancer combining with atlas, video and specific cases, the diet was controlled to make a correct and reasonable diet plan, the postoperative precautions were informed to correct any miss understanding, and patients were encouraged to monitor themselves. By popularizing the knowledge about gastric cancer and psychological guidance, the anxious and depressive moods were eliminated which could assist the recovery.

Evaluation method: Automatic biochemical analyser was used to detect the nutritional indicators in the body; enzymic

method was used to detect the cell numbers, and the life quality of patients was evaluated by the QLQ-C30 questionnaire made by the European Organization for Research and Treatment of Cancer (EORTC).

Observed indicators

Nutrition status, immune function and life quality in two groups before and after treatment were observed and recorded.

Statistical analysis

SPSS 18.0 was used for data analysis. The data were presented as mean \pm standard deviation ($\bar{x} \pm s$), t test was used for the comparison of means, χ^2 test was used to analyse the measurement data. $P<0.05$ was considered as statistically significant.

Results

Analysis of nutrition status in two groups before and after treatment

Nutrition status was not different between the observation group and the control group before treatment ($P>0.05$); the body mass, body fat content and prealbumin in the observation group after treatment were not different from the control group ($P>0.05$); after treatment, the body protein content and albumin content in the observation group were higher than the control group, which were different ($P<0.05$) (Table 1).

Table 1. Analysis of nutrition status in two groups before and after treatment ($\bar{x} \pm s$).

Group	Number of cases	Body mass (kg)		Body protein content (kg)		Body fat content (kg)		Albumin content (g/L)		Prealbumin content (mg/L)	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Observation group	50	55.26 \pm 9.33	53.49 \pm 8.27	12.58 \pm 1.85	11.78 \pm 1.34	13.36 \pm 2.39	12.83 \pm 2.65	36.85 \pm 3.14	35.79 \pm 3.12	134.42 \pm 35.65	133.79 \pm 45.62
Control group	50	56.12 \pm 7.50	50.65 \pm 9.41	12.63 \pm 1.89	10.73 \pm 1.92	13.52 \pm 2.85	12.15 \pm 2.93	36.64 \pm 4.27	31.25 \pm 4.92	134.18 \pm 37.39	131.12 \pm 37.48
t value		0.508	1.603	0.1337	3.1711	0.3042	1.2171	0.2802	5.5104	0.0328	0.3198
P value		0.6126	0.1122	0.8939	0.002	0.7616	0.2265	0.7799	<0.0001	0.9739	0.7498

Analysis of immune indicators in two groups before and after treatment

Immune function was not different between the observation group and the control group before treatment ($P>0.05$). After treatment, the number of CD3+, CD4+ and CD8+ cells in the observational group were significantly higher than the control group, which were different ($P<0.05$), the ratio of CD4+/CD8+ in the observation group was higher than the control group, however there was no significant difference ($P>0.05$) (Table 2).

Analysis of life quality indicators in two groups before and after treatment

The QLQ-C30 questionnaire was used to score the life quality. The life quality was not different between the observation group and the control group before treatment ($P>0.05$). The social function of patients in the observation group after treatment was not different from the control group ($P>0.05$), however, the scores of physical function, cognitive function

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and emotional function were better than the control group, which were different ($P < 0.05$) (Table 3).

Table 2. Analysis of immune indicators in two groups before and after treatment ($\bar{x} \pm s$).

Group	Number of cases	CD3+		CD4+		CD8+		CD4+/CD8+	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Observation group	50	64.63 ± 5.37	63.37 ± 7.62	39.28 ± 4.51	38.67 ± 4.59	27.61 ± 5.73	26.21 ± 5.26	1.49 ± 0.80	1.43 ± 0.85
Control group	50	64.35 ± 5.65	60.28 ± 7.70	39.66 ± 4.35	34.71 ± 4.28	27.42 ± 5.40	22.59 ± 5.35	1.46 ± 0.78	1.15 ± 0.85
t value		0.254	2.0169	0.4288	4.4618	0.1706	3.4118	0.1899	1.8235
P value		0.8	0.0464	0.669	<0.0001	0.8649	0.0009	0.8498	0.0713

Table 3. Analysis of life quality indicators in two groups before and after treatment (point, $\bar{x} \pm s$).

Group	Number of cases	Physical function		Cognitive function		Role function		Emotional function		Social function	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Observation group	50	78.56 ± 8.38	89.42 ± 12.35	74.67 ± 14.20	84.10 ± 12.45	70.92 ± 12.63	76.89 ± 10.65	73.61 ± 10.68	90.72 ± 8.27	77.68 ± 15.31	80.24 ± 13.46
Control group	50	78.53 ± 11.59	80.37 ± 14.32	74.23 ± 15.31	76.54 ± 12.31	70.25 ± 10.37	71.55 ± 13.14	72.41 ± 9.34	75.60 ± 10.01	77.26 ± 16.04	79.67 ± 13.13
t value		0.0148	3.3841	0.149	3.0533	0.2899	2.2355	0.5981	8.2341	0.1339	0.2143
P value		0.9882	0.001	0.8819	0.0029	0.7725	0.0277	0.5512	0	0.8937	0.8307

Discussion

The occurrence rates of malnutrition and immunosuppression in elderly patients with gastric cancer remain high, which are the reasons that cause deterioration of disease [11-14]. Due to the surgical trauma, patients are liable to lose the confidence of recovery, and develop negative moods such as fear, anxiety, disappointment and depression [5]. Without timely intervention, patients are liable to have cancer anorexia-cachexia syndrome, manifesting as poor appetite, tissue consumption, muscle atrophy and poor organ function [15-17].

It has been reported that in gastric cancer patients, the intake of nutrient substances are seriously insufficient, the body mass index is low, and the body protein content (such as serum protein and haemoglobin) is low [18-21]. Cancer is a type of stress, most of patients have psychological crisis at different stages including diagnosis stage, treatment stage and recovery stage manifesting as poor appetite, anxiety and depression [22]. Psychological status can directly affect the postoperative nutrition, immune function and life quality. In this study, the results showed that after surgery although the anxious and depressive moods of patients treated by routine nursing treatment were relieved, the effect was not significant. The body mass, body fat content, body fat content and prealbumin were significantly decreased. The surgical trauma and psychological depression aggravated the immune dysfunction, thus the number of CD3+, CD4+ and CD8+ cells were significantly decreased. The scores of physical function,

cognitive function, role function and emotional function were low, indicating that the recovery condition was not satisfactory.

In the recent years, as the development and conversion of medical mode, the psychological status is becoming more and more important in prevention, control and recovery of human diseases [23,24]. Active psychological interventions are gradually applied in the postoperative nursing of patients. By adjusting the psychological status of patients, giving care, providing emotional support, correcting misunderstanding about cancer, encouraging self-monitoring, popularizing knowledge about gastric cancer and administrating psychological counselling, the anxious and depression moods can be eliminated to assist the recovery. Some researchers have shown that positive psychological status of patients can effectively alleviate the pressure, which has positive effect on treatment cooperation and recovery, significantly increase the compliance of patients and reduce postoperative complications [25,26]. It is beneficial for the recovery of patients. According to the survey, the survival rate of cancer patients after psychological intervention is 100% higher than the patients without psychological intervention [27].

In this study, the results showed that after active psychological nursing combined with routine nursing, the postoperative negative moods such as anxiety, disappointment and depression of patients were significantly improved; the body mass, body fat content and prealbumin content were not significantly decreased. The positive psychological status was

beneficial for the postoperative intake of nutrition. The number of CD3+, CD4+ and CD8+ cells were not different from before treatment, and the immune function was normal. In the results of life quality, the scores of physical function, cognitive function, role function and emotional function were significantly increased compared with before treatment. The physical function score and emotional function score were (89.42 ± 12.35) and (90.72 ± 8.27) points, which sufficiently indicated that effective psychological intervention could obviously promote the recovery of cancer patients.

In conclusion, a positive psychological status of elderly patients with gastric cancer can improve the nutrition status, immune function and life quality. It is significant in improving clinical manifestations and outcomes, which is worthy of further promotion.

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