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Original Article

Clinical application of comfort nursing in elderly patients with advanced lung cancer

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Abstract: Objective: To explore the clinical effect of comfort nursing in elderly patients with advanced lung cancer (ALC). Methods: Eighty-six elderly patients with ALC treated in our hospital were selected as clinical subjects for this prospective study. The patients were randomly divided into the control group (n=43, received routine nursing) and the observation group (n=43, received additional comfort nursing based on routine nursing) according to a digital table method. The scores of pressure ulcer scale (Braden), Morse fall scale (MFS), numerical rating scale (NRS) for pain, activity of daily living (ADL) scale, incidence of complications and nursing satisfaction were compared between the two groups. Results: The scores of Braden and ADL scale of the two groups were significantly improved (all $P<0.05$) under different nursing methods. The improvement of patients in the observation group was better than that in the control group after nursing, and the difference was statistically significant (all $P<0.01$). Compared with those before nursing, the scores of MFS and NRS in the two groups were decreased, and the improvements in the observation group were more obvious ($P<0.05$). The incidence of complications in the control group (83.72%) was significantly higher ($P<0.05$) than that in the observation group (65.12%). The nursing satisfaction of patients in the control group (76.74%) was significant lower ($P<0.05$) than that in the observation group (93.02%). Conclusion: Comfort nursing has a positive clinical effect in elderly patients with ALC. It can improve the patients' quality of life and reduce the incidence of pain and complications, which has high patient satisfaction and obvious clinical effects.

Keywords: Comfort nursing, advanced lung cancer, elderly patients, clinical effect

Introduction

Lung cancer is a kind of malignant tumor, which has a high fatality rate and seriously endangers people's health and safety. Especially in advanced patients, there will be severe pleural effusion accompanied by chest tightness, shortness of breath, chest pain and other symptoms, which can bring great physical pain to patients, affecting their quality of life and the degree of treatment compliance [1, 2]. Some patients will have greater adverse reactions when receiving chemoradiotherapy, which will affect patients' daily life and treatment effects, bring greater psychological and mental burden and anxiety to patients, and reduce patients' treatment compliance and treatment confidence [3, 4]. As early as the 1980s, the World Health Organization had set up a project focusing on how to improve the quality of life of cancer patients and reduce their suffering [5]. It has been reported that the effective implementation of nursing quality and nursing detail has a positive effect on the sustainability and effectiveness of the treatment of advanced cancer patients. It can improve the patients' treatment compliance and reduce their suffering [6]. Therefore, different nursing methods and research on these methods are of great significance for the clinical application of cancer patients.

Traditional routine nursing only performs the basic nursing measures for patients, mostly centering on the work itself. It does not reflect the care and attention that are needed to provide the patients' best medical treatment status and the take into account the specific physical and mental conditions; the neglect of which may easily to cause poor nursing, low nursing quality and so on [7]. The comfort nursing model is a new type of comprehensive nursing

method based on holistic nursing, which has the concepts of using special intensity comfort to make people relatively comfortable and help them have acceptable for their psychological, physiological, social and other personal aspects, helping the patients be in a good state and have better treatment compliance. So as to reduce the degree of unhappiness and health related complications, as well as promote treatment compliance and treatment progress, and improve nursing satisfaction, finally achieving the best medical attitude pursued by the patients [8]. It has been reported that the application of comfort nursing has been beneficial to patient recovery in many departments such as obstetrics and gynecology, orthopedics, burn units and other departments, with definite results and good clinical response [9, 10]. However, the nursing effect of comfort nursing in the treatment of lung cancer has not been deeply studied.

Therefore, this study comprehensively explores the clinical application effects of comfort nursing in elderly patients with advanced lung cancer (ALC), in order to provide more clinical research data and data support for the application of this nursing model in elderly patients with ALC.

Materials and methods

Clinical data

Eighty-six elderly patients with ALC treated in our hospital from August 2017 to July 2020 were selected as clinical subjects for this prospective study. These patients were randomly divided into the control group (n=43, received routine nursing) and the observer group (n=43, received additional comfort nursing based on the routine nursing). Both groups of patients understood the content of the trial and signed an informed consent form. This study was approved by the Ethics Committee of our hospital.

Inclusion and exclusion criteria

Inclusion criteria: a. Patients having diseases that met the diagnostic criteria of the *Clinical Guidelines of Lung Cancer in China*, and were confirmed by pathological examination [11]; b. The age of the patient was 60-80 years old; c. Predicted survival time ≥1 year; d. Patients that can communicate normally without mental illness or mental retardation.

Exclusion criteria: a. Patients with severe heart, liver, kidney and other organ diseases; b. Patients with difficulty communicating or other mental illnesses; c. Patients whose survival time is too short or those who were unable to receive chemoradiotherapy.

Methods

The control group received routine nursing, including admission arrangements, health education, ward nursing, diet guidance, prevention of complications, and so on. The observation group was given additional comfort nursing interventions on the basis of routine nursing. Specifically for: Environmental nursing: The ward was kept clean and tidy and ventilated regularly to create a warm hospitalization environment. The number and frequency of visitors was controlled to ensure a good rest environment and adequate sleep time for patients. Noise control was paid attention to during the whole cleaning process by the medical staff. Mental nursing: Due to the suffering of cancer patients and the lack of understanding of the disease, patients often experienced depression, anxiety, and even despair. Nursing staff actively communicated with patients to grasp their psychological state and demands, and to reduce their negative emotions. Music, reading and other ways of creative expression care were given to patients to divert their attention, and at the same time, the shared experiences of successful patient survival with prolonged cases were enumerated and communicated. The interaction between relatives and patients was promoted to form a mutually encouraging patient circle, 1-2 times a week. Thus, the patients' confidence in treatment was improved [12]. Skin and oral care: Soft cotton clothes were given to patients during admission, and clean sheets and quilts were changed every 2 days to reduce skin irritation from clothes and bedding. For severe skin discomfort or itching, gently was used to relieve itching. As most patients had severe oral mucosal damage, the oral mucosal care solution or normal saline was given to patients to rinse out their mouths before meals. If necessary, lidocaine pain intervention was used, and oral cleaning was necessary after meals to prevent the risk of infection

Table 1. Comparison of clinical data between the two groups

Group	Control group	Observation group	P
Male/Female ratio	28/15	30/13	0.645
Body weight (kg)	58.9±10.4	60.4±11.5	0.528
Age (year)	63.9±9.7	66.4±7.2	0.178
Cancer type (n)			0.539
Squamous cell carcinoma	13	10	
Adenocarcinoma	11	12	
Small cell cancer	19	21	

after mucosal injury [13]. For patients treated by surgery, if respiratory secretions accumulate and block the affected side or the healthy side of the airway due to oozing and bleeding, it may cause atelectasis. The respiratory secretions should be cleared by fiberoptic bronchoscopy in time, and appropriate amount of dexamethasone should be given for anti-infection therapy. Pain and training care: Distraction methods such as reading, music and so on were used to relieve mild pain. Patients were instructed to breathe and relax to relieve pain. For patients with severe pain, painkillers were given appropriately to improve patients' tolerance and treatment compliance. Some elderly patients with disturbances in respiration were assisted with necessary measures such as expectoration training, drugs to moisten the lungs to arrest cough or aerosol inhalation to reduce sputum [14]. Diet care: Patients were instructed to follow up with comprehensive nutrition. The elderly were guided to eat multiple meals with small amounts in each, and to have effective intake of high-protein, high-calorie food and vitamin supplements. Smoking, drinking and spicy food were abstained from.

Outcome measurements

The main outcome measures included Braden scale, Morse fall scale (MFS), numerical rating scale (NRS) for pain and activity of daily living (ADL) scale. Among them, the Braden scale is scored in terms of sensation, humidity, activity, mobility, nutrition and friction, with a score of 1-4 for each item. The lower the value, the higher the risk, specifically with a score of 15-18 points for mild risk, 13-14 points for moderate risk, 10-12 points for high risk, and <9 points for extreme risk. The MFS was scored in terms of fall records, medical diagnosis, walking assistance, intravenous infusion, gait and mental state within 3 months, with a score of 0-24 points for zero risk, 25-45 points for low risk, and more than 45 points for high risk; The NRS was scored 0-10 points indicating the degree of pain. A straight line was divided into ten segments and circled to evaluate the pain in the past 24 hours, specifically with a score of 0 points for zero pain, 1-3 points for mild pain, 4-6 points for moderate pain, 7-9 points for severe pain, and 10 points for severe pain. The ADL score was based on the self-care behaviors of gatism, personal self-care, toilet assistance, eating, transfer, activities, dressing, stairs and bathing, etc. The full score was 100 points, and a score <20 indicated that they could not take care of themselves at all, a score of 20-40 points indicated that they needed more help, a score of 41-60 points indicated that they needed some help, and a score >60 points indicated that they can basically take care of themselves. All evaluation indicators were scored before discharge.

The secondary outcome measures were the incidence of complications and nursing satisfaction. The incidence of complications = the cases of complications/total cases × 100%. Nursing satisfaction was divided into satisfaction, basic satisfaction and dissatisfaction. Satisfaction rate = (satisfaction + basic satisfaction)/total number of cases × 100%.

Data statistics

SPSS 20.0 was used to analyze all the data of this study. The measurement data in accordance with normal distribution were expressed by mean ± standard deviation ($\bar{x}$ ± sd). The independent sample t-test was used to analyze the comparison between groups. The enumeration data were expressed by percentage (n/%) and analyzed by chi-square (χ^2) test. The difference was statistically significant at $P<0.05$.

Results

Comparison of clinical data

The baseline clinical data of the two groups were compared, and it was found that there was no significant difference in gender, body

Table 2. Comparison of the scales of Braden scale and MFS of patients under different nursing modes

Group	Control group	Observation group	t	P
n	43	43		
Braden scores				
Before nursing	13.23±1.31	13.54±1.65	0.965	0.337
After nursing	15.21±1.29*	16.01±1.13*	3.059	0.003
MFS scores				
Before nursing	43.6±3.8	44.5±2.7	1.266	0.209
After nursing	32.1±6.1*	27.8±7.5*	2.917	0.005

Note: Braden: The scale of pressure ulcer; MFS: Morse fall scale. Compared with the same group before nursing, *P<0.05.

Table 3. Comparison of NRS scores between the two groups

Group	Control group	Observation group	t	P
n	43	43		
NRS scores				
Before nursing	7.35±1.18	7.14±1.32	0.778	0.439
After nursing	5.31±1.41**	4.46±0.89**	3.343	0.001

Note: NRS: Numerical rating scale. Compared with the same group before nursing, **P<0.01.

Table 4. Comparison of ADL scores between the two groups

Group	Control group	Observation group	t	P
n	43	43		
ADL scores				
Before nursing	26.82±3.48	28.65±5.11	1.766	0.081
After nursing	41.33±5.18**	49.27±8.22**	5.539	<0.001

Note: ADL: Activity of daily living. Compared with the same group before nursing, **P<0.01.

Table 5. Comparison of complications between the two groups

Group	Control group	Observation group	χ^2	P
n	43	43		
Vomiting	17	11	-0.221	0.825
Dizziness	14	9		
Local pain	19	10		
Dyspnea	20	12		
Total incidence (%)	83.72 (36/43)	65.12 (28/43)	3.909	0.048

weight, age and cancer type between the two groups (all P>0.05). The details were shown in **Table 1**.

Comparison of Braden and MFS scores

The scores of Braden scale and MFS of the two groups were significantly improved under different nursing model (P<0.05), and the improvement of the observation group was significantly better than that of the control group after nursing (P<0.01). The details were shown in **Table 2**.

NRS score comparison

It can be seen from **Table 3**, when compared with before nursing, the NRS scores of the two groups were significantly lower (all P<0.01). The observation group improved more significantly than the control group after nursing (P<0.01), suggesting that comfort nursing has a positive and obvious impact on the pain of advanced cancer patients, with the definite clinical effects.

ADL score comparison

Comparing the scores of the two groups of patients before nursing, there was no significant difference between the control group and the observation group (P>0.05). After nursing, both groups were significantly improved (all P<0.01). The scores of the observation group and the control group were 49.27±8.22 and 41.33±5.18, respectively, and the difference was statistically significant (P<0.001). The details were shown in **Table 4**.

Comparison of the incidence of complications

The incidence of complications was compared between the two groups. The control group experienced vomiting (n=17), dizziness (n=14), local pain (n=19) and dyspnea (n=20), which were higher numbers than those in the observation group (**Table 5**). At the same time, the total incidence of complications was calculated in the two groups, the control

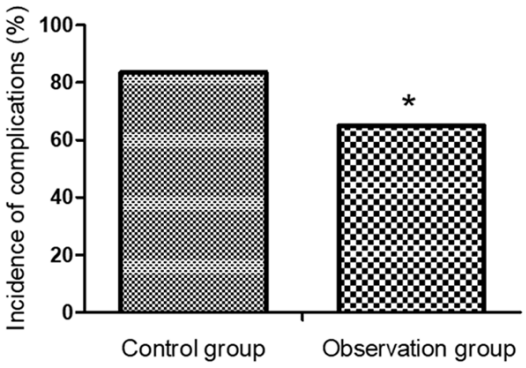

Figure 1. Comparison of the incidence of complications between the two groups. Compared with the same group before nursing, *P<0.05.

group was 83.72% (36/43), and the observation group was 65.12% (28/43). The difference was statistically significant (P=0.048<0.05), as shown in **Figure 1**.

Comparison of nursing satisfaction

As can be seen from **Table 6**, the nursing satisfaction of the observation group was 93.02% (40/43), which was significantly higher than that of the control group 76.74% (33/43). The difference was statistically significant (P<0.05), suggesting that comfort nursing is effective in improving patients' nursing recognition and satisfaction.

Discussion

Lung cancer is a disease that is seriously hazardous to people's life and health, especially ALC. It is often accompanied by adverse symptoms such as dyspnea, severe pain and fever, that affecting their quality of life. Patients, especially the elderly are prone to pessimism and depression, and they have increased daily need for more companionship and help [15]. In the whole nursing process, comfort nursing allows patients to receive comprehensive nursing care both psychologically and physiologically. It can improve patients' treatment compliance and compatibility, improve treatment effects, prolong survival time, and improve quality of life [16]. It has been reported that comfort nursing has a positive effect on the improvement of the quality of life of cancer patients. For example, it can effectively alleviate the occurrence of complications in patients with breast cancer [17]. The results of this study also showed that the incidence of pressure ulcers in the observation group was significantly lower than that in the control group, and the MFS score of the patients in the observation group was lower than that in the control group, suggesting that comfort nursing can reduce adverse events and risk events in patients with ALC. At the same time, Guo et al. reported that comfort nursing can reduce pain and improve the ability of independent living in colorectal cancer patients [18]. In this study, the ADL score of patients in the observation group was significantly higher than that in the control group. Patients who received the comfortable nursing mode improved their own behavior ability and personal activity behavior, reduce the degree of need for accompaniment, and this shows a better autonomous ability which was better than that of routine nursing patients.

Pain is one of the causes of suffering and torture in patients with advanced cancer. In this study, the patients' pain score in the observation group was lower than that in the control group. This suggested that the patient's tolerance was improved, and this may also be related to self-adjustment and overall comfort after nursing. Fillon et al. also reported that effective control of pain in cancer patients is a hot spot in the field of treatment and nursing [19, 20]. It is also one of the main factors to reduce complications and improve patient satisfaction. In this study, the incidence of complications in the observation group (65.12%) was significantly lower than that (83.72%) in the control group, suggesting that comfort nursing pays attention to the details of patients' body comfort, and effectively reduces the incidence of complications. For analysis, a questionnaire was conducted on patients nursing satisfaction, showing that the patients' nursing satisfaction and treatment compliance in the observation group was higher than that in the control group. Bartlett et al. also reported that nursing satisfaction is directly related to nursing mode, and comfort nursing can make elderly patients feel trust and confidence in effective treatment [21], especially targeted nursing and training guidance, which can effectively reduce the incidence of complications.

Although this study has obtained positive clinical application data and identified the applica-

Table 6. Comparison of nursing satisfaction between the two groups

Groups	n	Satisfaction	Basic satisfaction	Dissatisfaction	Satisfaction rate %	P
Control group	43	9	24	10	76.74	0.035
Observation group	43	11	29	3	93.02	

tion effect of comfort nursing in elderly ALC patients, this study also has some shortcomings, such as being from a single center, insufficient sample size, short follow-up time and so on. In the later stage, we need to improve the research scope and population more comprehensively and widely.

In summary, comfort nursing has a definite clinical effect on elderly advanced lung cancer patients. It can improve their quality of life, reduce the pain caused by the disease and the incidence of complications in treatment. It also shows a high nursing satisfaction and clinical significance.

Disclosure of conflict of interest

None.

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