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Cancer Complicated with Respiratory Failure

# Effect of Humanistic Nursing Care on Relieving Generalized Pain and Negative Emotions in Patients with Advanced Liver Cancer Complicated with Respiratory Failure

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To investigate the effect of humanistic nursing care on relieving generalized pain and negative emotions in patients with advanced liver cancer complicated with respiratory failure. 80 patients with advanced liver cancer complicated with respiratory failure who were admitted to the oncology department of our hospital (November 2018-November 2019) were chosen as the study subjects and split into group X (n=40) and group Y (n=40), according to method of coin tossing. Among them, group Y received clinical routine nursing care, while group X received humanistic nursing care based on the nursing care in group Y; after that, the effect of these two nursing care models on generalized pain and negative emotions in patients was compared. No obvious difference in sex ratio, age, smoking history, drinking history, Child-Pugh classification of liver function, tumor morphotype and place of residence was found between the two groups (P < 0.05). With no obvious differences in HAMA and HAMD scores between the two groups before nursing care (P > 0.05), HAMA and HAMD scores in group X after nursing care were obviously lower compared with group Y (P < 0.001). The VAS scores of the patients in both groups after nursing care were obviously lower (P < 0.001), VAS scores in group X after nursing care were obviously lower compared with group Y (P < 0.001). With no significant differences in quality of life and PSQI scores between the two groups before nursing care (P > 0.05), quality of life and PSQI scores in group X after nursing care were obviously better compared with group Y (P < 0.001). The scores of optimism, self-reliance and tenacity of the patients in both groups after nursing care were obviously higher (P < 0.05), and scores of optimism, self-reliance and tenacity of the patients in group X were obviously higher compared with group Y (P < 0.05). The total nursing satisfaction in group X was obviously higher compared with group Y (P < 0.05). Humanistic nursing care can effectively relieve generalized pain and improve negative emotions as well as life quality in patients with advanced liver cancer complicated with respiratory failure, with significant therapeutic effect, which is worthy of application and popularization in clinical nursing.

L iver cancer is a highly prevalent tumor disease in hepatobiliary surgery with high mortality rate, and due to its insidious onset, the majority of patients may have entered middle and advanced stages when diagnosed [1,2]. At present, surgery is the main treatment for liver cancer, but patients' fear of cancer and prognosis brings a series of negative emotions, seriously affecting their quality of sleep, with unfavorable effect on clinical treatment. Relevant studies have found that [3], with the progress of liver cancer in middle and advanced stages, multiple tissues and organs have been greatly

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affected. For example, respiratory failure is a common complication of liver cancer characterized by pulmonary ventilation dysfunction or air exchange dysfunction caused by various causes, which finally results in hypoxia and a series of physiological and metabolic disorders. In addition, cancer pain is the other main clinical manifestation in patients with liver cancer in advanced stage, in which intense physical pain will not only exacerbate patients' suffering, but also induce multiple clinical complications, greatly affecting the quality of life [4-6]. Humanistic nursing caring refers to the all-round implementation of clinical nursing care for patients, so as to make patients maintain positive attitudes during clinical treatment and improve prognosis [7]. Based on this, in our study, in order to further investigate the effect of humanistic nursing care on relieving generalized pain and negative emotions in patients with advanced liver cancer complicated with respiratory failure, 80 patients were chosen as the study subjects, and reported as below.

## MATERIALS AND METHODS

### General Information

80 patients with advanced liver cancer complicated with respiratory failure admitted to the oncology department of our hospital (November 2018-November 2019) were chosen as the study subjects and split into group X (n=40) and group Y (n=40), according to method of coin tossing.

### Inclusion Criteria

① Patients met the diagnostic criteria for advanced liver cancer and they also had respiratory failure. ② Patients had the expected survival of more than or equal to 3 months. ③ Patients had clear consciousness and had no communication barriers. ④ This study got approval of the Hospital Ethics Committee, and the patients and their families were informed of the purpose and process and signed the informed consent.

### Exclusion Criteria

① Patients had other malignant tumors. ② Patients died during the nursing care. ③ Patients had mental and other cognitive disorders or refused to cooperate with the study.

### Methods

Group Y received clinical routine nursing care, including various physical examinations, medication guidance and supervision, clinical health education, dietary interventions, etc. [8].

Based on the treatment in group Y, group X received the humanistic nursing care, and specific implementation steps were as follows. ① Establis

hment of humanistic nursing care teams. After humanistic nursing care teams were established, the nurses with more than 5-year experience in clinical practise were appointed as the team leaders, who had to shoulder the responsibility of arranging tasks according to the working ability of each nurse and the needs of patients and making tour supervision. ② Medication guidance. Medical staff should proactively inform patients of medication methods, the mechanism of the drugs as well as potential adverse reactions after medication, so that they can have correct understanding of the drugs. Besides, daily supervision by nursing staff should be carried out for patients' regular, quantitative medication. ③ Establishment of a good nurse-patient relationship. On the daily tour, medical staff should actively ask about patients' conditions with gentle and slow tone to obtain patients' trust, and encouraged patients to take positive attitudes towards life to enhance their confidence in treatment. ④ Environmental nursing support. Medical staff should keep wards tidy and in preference temperature and humidity, and after getting permission, they could play soothing music to help patients relax, thus providing quiet and comfortable treatment environment for patients. ⑤ Pain management. A body pain curve table made by our department was used to help medical staff record and grasp the times and severity of patients' daily pain and remind patients to take medication on time. Plus, for patients with severer pain, medical staff should notify attending doctors promptly for treatment. ⑥ Health education. After mastering patients' perception of their own diseases, medical staff should explain the progression of disease, specific treatment, etc. to patients and distribute cancer-related knowledge brochures to enrich patients' knowledge of liver cancer. ⑦ Social support. Medical staff should communicate with accompanying family members to inform them of patients' clinical conditions and their psychological states and encourage family members to communicate with the patients, so as to help the patients feel more love and support from their families and evoke their inner desire for a good life.

### Evaluation Indexes

Degree of depression of the patients in both groups was evaluated before and after nursing care, according to the *Hamilton Depression Scale* [9] (HAMD), which consisted of 17 scoring items. The score (< 8 points) represented normal condition, the score (8-20 points) represented potential depression, the score (21-35 points) represented depression and the score (> 35 points) represented severe depression.

Degree of anxiety of the patients in both groups was evaluated before and after nursing care,

according to the *Hamilton Anxiety Scale* [10] (HAMA), which consisted of 14 scoring items. The score (< 7 points) represented normal condition, the score (7-14 points) represented potential anxiety, the score (15-21 points) represented anxiety and the score (> 21 points) represented severe anxiety.

Degree of body pain of the patients in both groups was evaluated before and after nursing care, according to the *Visual Analog Scale* [11] (VAS), with the total score of 10 points, and higher scores indicated severer body pain in patients.

Quality of life was evaluated before and after nursing care, according to the *Quality of Life Scale for Cancer Patients* [12], which consisted of 15 scoring items, with first 10 items scoring 5 points for each one, last 5 items scoring 10 points for each one, and higher scores represented better life quality.

Quality of sleep quality of the patients in both groups was evaluated before and after nursing care, according to the *Pittsburgh Sleep Quality Index Scale* [13] (PSQI), with the total score of 21 points, and higher scores indicated worse quality of sleep.

Psychological resilience of the patients in both groups was evaluated before and after nursing care, according to the *Psychological Resilience Scale* [14] in Chinese version, which consisted of optimism, self-reliance and tenacity, with each scoring of 20, 32 and 42 points, respectively, and higher scores indicated greater psychological resilience.

Clinical nursing satisfaction of the patients in both groups was evaluated by the *Clinical Satisfaction Questionnaire of Patients with Advanced Liver Cancer* made by our department, with the total score of 100 points. The score (≥ 85 points) represented very satisfied, the score (84-65 points) represented satisfied and the score (≤ 64 points) represented unsatisfied. Total satisfaction rate = very satisfaction rate + satisfaction rate.

## Statistical Treatment

All the data were processed for statistical analysis by SPSS21.0 software, and GraphPad Prism 7 (GraphPad Software, San Diego, USA) was used to draw the pictures of the data. Measurement data were expressed by ($\bar{x}\pm s$) and tested by t-test. Enumeration data were expressed as [n (%)] and tested by $X^2$ test. The differences had statistical significance when $P < 0.05$.

## RESULTS

### Comparison Of Clinical Information

No obvious difference in sex ratio, age, smoking history, drinking history, Child-Pugh classification of liver function, tumor morphotype and place of residence was found between the two groups ($P < 0.05$; Table 1).

Table 1.
Comparison of clinical information

| Types | Group X (n=40) | Group Y (n=40) | $\chi^2$/t | P |
|---|---|---|---|---|
| Gender | | | 0.053 | 0.818 |
| Male | 25 (62.50%) | 24 (60.00%) | | |
| Female | 15 (37.50%) | 16 (40.00%) | | |
| Average age (years old) | 53.68±3.42 | 53.65±3.45 | | |
| BMI (kg/m$^2$) | 21.36±0.59 | 21.38±0.61 | | |
| Smoking history | | | 0.228 | 0.633 |
| No | 12 (30.00%) | 14 (35.00%) | | |
| Yes | 28 (70.00%) | 26 (65.00%) | | |
| Drinking history | | | 0.313 | 0.576 |
| No | 9 (22.50%) | 7 (17.50%) | | |
| Yes | 31 (77.50%) | 33 (82.50%) | | |
| **Child-Pugh classification of liver function** | | | 0.251 | 0.617 |
| Level B | 12 (30.00%) | 10 (25.00%) | | |
| Level C | 28 (70.00%) | 30 (75.00%) | | |
| **tumor morphotype** | | | | |
| Massive type | 9 (22.50%) | 11 (27.50%) | 0.268 | 0.606 |
| Nodular type | 14 (35.00%) | 13 (32.50%) | 0.056 | 0.813 |
| Diffuse type | 17 (42.50%) | 16 (40.00%) | 0.052 | 0.820 |
| **Place of residence** | | | 0.474 | 0.491 |
| Urban area | 14 (35.00%) | 17 (42.50%) | | |
| Rural area | 26 (65.00%) | 23 (57.50%) | | |

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## Comparison Of The Hama And Hamd Scores

With no obvious differences in the HAMA and HAMD scores between the two groups before nursing care (P > 0.05), HAMA and HAMD scores in group X after nursing care were obviously lower compared with group Y (P < 0.05; Table 2).

### Table 2.
### Comparison of the HAMA and HAMD scores (x̄±s, points)

| Group | n | HAMA score | | HAMD score | |
|---|---|---|---|---|---|
| | | Before nursing care | After nursing care | Before nursing care | After nursing care |
| Group X | 40 | 17.62±2.14 | 7.23±1.52 | 21.24±2.16 | 9.23±1.24 |
| Group Y | 40 | 17.59±2.15 | 13.43±1.58 | 21.26±2.18 | 16.52±1.83 |
| t | | 0.063 | 17.885 | 0.041 | 20.857 |
| P | | 0.950 | 0.000 | 0.967 | 0.000 |

## Comparison Of The VAS Scores

VAS scores in both groups after nursing care were obviously lower (P < 0.05), and VAS scores in group X after nursing care were obviously lower compared with group Y (P < 0.05; Figure 1).

### Figure 1.
### Comparison of the VAS scores (x̄±s)
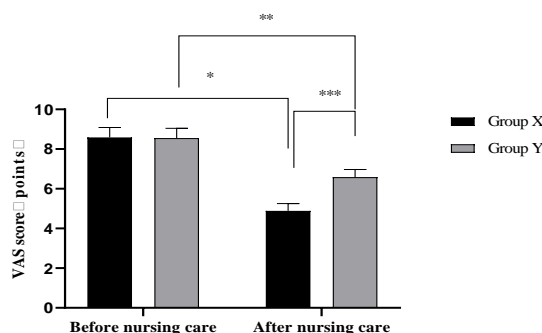


Note: The abscissa indicated before and after nursing care, while the ordinate indicated VAS score, points.

In group X, VAS scores before and after nursing care were (8.23 ± 0.71) points and (4.63 ± 0.52) points, respectively, while in group Y, VAS scores before and after nursing care were (8.21 ± 0.69) points and (6.32 ± 0.54) points, respectively.

* indicated an obvious difference in VAS scores of group X before and after nursing care (t = 25.872, P = 0.000).

** indicated an obvious difference in VAS scores of group Y before and after nursing care (t = 13.643, P = 0.000).

*** indicated an obvious difference in VAS scores between the two groups before and after nursing care (t = 14.258, P = 0.000).

## Comparison Of The Quality Of Life And Psqi Scores

With no obvious differences in the quality of life and PSQI scores between the two groups before nursing care (P > 0.05), quality of life and PSQI scores in group X after nursing care were obviously better compared with group Y (P < 0.05; Table 3).

### Table 3.
### Comparison of the quality of life and PSQI scores (x̄±s, points)

| Group | n | Quality of life score | | PSQI score | |
|---|---|---|---|---|---|
| | | Before nursing care | After nursing care | Before nursing care | After nursing care |
| Group X | 40 | 34.56±5.64 | 62.31±3.58 | 16.04±2.35 | 4.58±1.04 |
| Group Y | 40 | 34.59±5.67 | 42.26±3.42 | 16.07±2.33 | 9.18±1.03 |

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| | | | | |
|---|---|---|---|---|
| t | 0.024 | 25.612 | 0.057 | 19.876 |
| P | 0.981 | 0.000 | 0.954 | 0.000 |

## Comparison Of The Psychological Resilience Scores

The sores of optimism, self-reliance and tenacity of the patients in both groups after nursing care were obviously higher($P < 0.05$), and the sores of optimism, self-reliance and tenacity of the patients in group X were obviously higher compared with group Y ($P < 0.05$; Table 4).

### Table 4.
### Comparison of the psychological resilience scores ($\bar{x}\pm s$, points)

| Group | n | Time | Optimism | Self-reliance | Tenacity |
|---|---|---|---|---|---|
| Group X | 40 | Before nursing care | 9.78±1.25 | 21.17±4.32 | 28.94±5.41 |
| | | After nursing care | 13.26±2.26 | 27.13±3.53 | 35.29±4.39 |
| Group Y | 40 | Before nursing care | 9.82±1.28 | 21.19±4.36 | 28.91±5.45 |
| | | After nursing care | 11.85±2.17* | 24.15±3.49* | 31.85±4.41* |

Note: The sores of optimism, self-reliance and tenacity of the patients in both groups after nursing care were obviously higher than those before nursing care. * indicated the comparison of the scores of optimism, self-reliance and tenacity after nursing care between the two groups, $P < 0.05$.

## Comparison Of The Clinical Nursing Satisfaction

Clinical nursing satisfaction in group X was obviously higher compared with group Y ($P < 0.05$), as shown in Table 5.

### Table 5.
### Comparison of the clinical nursing satisfaction [n (%)]

| Group | n | Very satisfied | Satisfied | Unsatisfied | Total satisfaction |
|---|---|---|---|---|---|
| Group X | 40 | 18 (45.00%) | 19 (47.50%) | 3 (7.50%) | 92.50% (37/40) |
| Group Y | 40 | 13 (32.50%) | 17 (42.50%) | 10 (25.00%) | 75.00% (30/40) |
| $X^2$ | | | | | 4.501 |
| P | | | | | 0.034 |

## DISCUSSION

As advanced liver cancer is mainly characterized by the difficult treatment, poor clinical prognosis, rapid progression and high mortality, the patients often suffer from negative emotions after diagnosis and lose confidence in treatment, with heavy psychological burdens, resulting in poor treatment outcomes [15]. Due to the insidious onset of liver cancer in early stage, most patients have entered the middle and advanced stages when diagnosed, missing the optimal treatment period. Clinical studies have confirmed [16] that there is a close association between the onset of liver cancer and hepatitis B, as hepatitis can damage hepatocytes, inhibit the regeneration of hepatocytes and increase the sensitivity of other pathogenic cancer cells. At present, radiotherapy, chemotherapy, interventional therapy, etc. are the main treatment methods for advanced liver cancer, which can effectively prolong patients' survival and improve their quality of life. Respiratory failure, a common complication in patients with advanced liver cancer, is mainly manifes

ted by dyspnea, hypoxia, and some symptoms in blood circulation system, digestive system as well as nervous system, increasing the difficulty of clinical treatment [17,18].

Liver pains combined with the suffering from radiotherapy and chemotherapy will exacerbate negative emotions, increase psychological burdens or even lead to suicide in patients; therefore, an effective clinical nursing care model that can alleviate generalized pain and improve negative emotions in patients with advanced liver cancer complicated with respiratory failure should be adopted as soon as possible. Studies have revealed that patients with advanced liver cancer not only need effective medical technology for treatment, but also need appropriate humanistic nursing care to relieve their negative emotions and enhance the confidence in treatment. The humanistic nursing care pays much attention to the role and value of the person, provides patients with all-round clinical nursing care and emotional support and shows much care about the progress of patients' diseases, thus greatly relieving body pain, enhancing the

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confidence in treatment and improving prognosis [19-21]. The study confirmed that VAS scores of the patients with advanced liver cancer complicated with respiratory failure after humanistic nursing care were obviously lower compared with group Y (P < 0.001), indicating that application of body pain curve table for the clinical nursing care in patients helps medical staff precisely grasp patients' physical conditions and implement corresponding treatment methods, which can effectively reduce the times and severity of daily pain.

Studies at home and abroad have demonstrated that most patients with advanced cancer have severe sleep disorders caused by multiple factors, such as clinical treatment, body pain, and psychological burdens; therefore, focusing on the sleep disorders of cancer patients, improving the quality of sleep and ensuring adequate sleep are also the key contents of clinical nursing care [22]. Our study found that the quality of sleep scores of the patients in group X after humanistic nursing care were obviously higher compared with group Y (P < 0.001), which is consistent with results of Singh et al [23] who have stated that after the implementation of humanistic nursing care for patients with breast cancer, the PSQI scores of the patients after nursing care were (4.43 ± 1.43) points, which were obviously lower than (16.28 ± 1.82) points before nursing care, illustrating that humanistic nursing care model can alleviate negative emotions and improve sleep quality of patients with advanced liver cancer complicated with respiratory failure.

In conclusion, humanistic nursing care can effectively relieve generalized pain and improve negative emotions as well as life quality of patients with advanced liver cancer complicated with respiratory failure, with significant therapeutic effect, which is worthy of application and popularization in clinical nursing.

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