EFFECTS OF TARGETED NURSING INTERVENTION ON THE CANCER PAIN AND LIFE QUALITY OF PATIENTS WITH ADVANCED GASTRIC CANCER

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ABSTRACT

Objective: To explore the effects of targeted nursing intervention on the cancer pain and life quality of patients with advanced gastric cancer.

Methods: A total of 68 patients with advanced gastric cancer admitted to our hospital from February 2018 to October 2019 were enrolled as research objects, of which 38 patients were given targeted nursing intervention during hospitalization as a research group and the rest 30 patients were given routine nursing during hospitalization as a control group. The visual analog scale (VAS) was used to evaluate the pain of each patient, and the self-rating anxiety scale (SAS) and self-rating depression scale (SDS) were adopted to evaluate the psychological state of them. In addition, compare medication compliance and quality of life, and the nursing satisfaction of them was also analyzed.

Results: The VAS score of the research group was significantly lower than that of the control group (P<0.001). Before intervention, there was no obvious difference in SAS and SDS scores between the two groups (both P>0.050), while after intervention, the scores of the research group were greatly lower than those of the control group (P<0.001). In addition, the medication compliance and life quality score of the research group were both greatly higher than those of the control group (both P<0.050), and the nursing satisfaction of the research group was greatly higher than that of the control group (P<0.050).

Conclusion: Compared with routine nursing, targeted nursing can more effectively relieve patients' pain and improve their psychological state and life quality, so it is worthy of promotion and application in clinical practice.

Keywords: Targeted nursing, gastric cancer, advance, cancer pain, life quality.

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Introduction

Gastric cancer is one of the common clinical malignant tumors originated from gastric mucosa epithelium, ranking fifth and third in the incidence and mortality of tumors in the world, respectively¹-². According to statistics, there are about 980,000 new cases of gastric cancer and 730,000 gastric cancer-related deaths each year³. Helicobacter pylori is the most significant known risk factor⁴. Because the early symptoms of gastric cancer are not typical, so it is difficult for patients to find it, and more than half of the patients are already at the middle or advanced stage at the time of diagnosis⁵. At present, gastric cancer is mainly treated through surgery, chemoradiotherapy, and targeted therapy⁶-⁷. However, the surgical treatment of patients with advanced is usually unsatisfactory, and the patients show a high postoperative recurrence rate and poor prognosis. In addition, the immune system damage caused by chemotherapy will also affect the life of them⁸.

Many patients with advanced gastric cancer suffer great physical and mental pain due to the uncontrollable severe and persistent cancer pain, which compromises their psychological and social functions and life quality⁹. Patients with advanced gastric cancer mainly rely on drugs for pain relief, mostly including opioid drugs. Although the pain relief effect of drugs is remarkable, long-term use of them is prone to drug resistance and addiction¹⁰. There-
fore, domestic and foreign researchers are constantly committed to exploring effective methods to ease cancer pain. With the deepening of the research, a growing number of scholars point out that nursing method intervention may be one of the important factors that affect the comfort of cancer patients. For example, Miladinia M et al. (11) have revealed that supportive nursing including massage can effectively ease the pain, fatigue, and sleep disorders of patients with leukemia, and Wang S et al. (12) also believe that psychological nursing can alleviate the negative emotions of patients with thyroid carcinoma and improve their life quality.

Because patients with advanced gastric cancer suffer severe physical and psychological torture, routine nursing can no longer meet the needs. Targeted nursing is a clinical common nursing mode, which advocates taking patients as the center, carrying out targeted nursing for patients, and focusing more on humanistic care. Yu J et al. (13) have found that for patients with chronic hepatitis B, targeted nursing on the psychology and sleep of the patients can provide significantly positive effects.

We inferred that targeted care also has high application value in patients with gastric cancer, but there is still little research on this kind at home and abroad. Therefore, in this experiment, we gave patients with advanced gastric cancer with targeted nursing intervention to verify the application value of targeted nursing on such patients, provide effective reference and guidance for clinic.

Materials and methods

General materials
A total of 68 patients with advanced gastric cancer admitted to our hospital from February 2018 to October 2019 were enrolled as research objects, of which 38 patients were given targeted nursing intervention during hospitalization as a research group and the rest 30 patients were given routine nursing intervention during hospitalization as a control group. The study was approved by the Ethics Committee of our hospital, and all participants signed informed consent forms after understanding the nursing content.

Inclusion and exclusion criteria
Patients who intended to receive follow-up treatment in our hospital after being diagnosed with advanced gastric cancer according to clinical examination, and those with expected survival time longer than 3 months.

The exclusion criteria of the study:
• Patients with early or middle gastric cancer;
• Patients with other comorbid tumors;
• Patients with mental disease who could not cooperate with treatment and nursing;
• Patients with poor treatment compliance;
• Patients without complete clinical data;
• Referred patients.

Methods

Patients in the control group were given routine nursing only as follows
Nursing staff were arranged to tell the patients and their family members about routine matters needing attention and nursing points, regularly check the vital signs of the patients every day, cooperate with the attending doctors to give the patients corresponding treatment measures, and use analgesic drugs according to the doctor’s advice.

Patients in the research group were given targeted nursing intervention as follows
The ward environment, attending doctors, and nurses were introduced to the patients after their admission, and knowledge related to the disease was imparted to them in the form of videos, brochures, etc. to eliminate patients’ fear of unfamiliar environment. In addition, the nurses were arranged to cooperate with doctors for patients’ treatment, closely observe adverse reactions of the patients, and give corresponding treatment.

The nurses were also arranged to assess the actual situation of the patients, and adjust the patients’ diet according to their condition, with light digestible food as the main food, because tumor growth consumed a large amount of energy in the human body, and enough nutrients such as protein should be ensured. Moreover, the nurses were asked to communicate with the patients more to understand their psychological changes at any time and intervened with them psychologically through methods including the cathartic method, suggestion method, and attention diversion method to counsel them once finding adverse emotions on them. Pain relief plans were developed for the patients according to their differences, and the patients were required to take pain relief drugs according to doctor’s advice.

Furthermore, nurses were arranged to ask the patients’ family members to accompany the patients more, and guide the family members in diverting the patients’ attention through talking, TV watching, and music listening to relieve the patients’ pain.
Finally, nurses were arranged to understand the pain control situation of patients through telephone or family follow-up after patients’ discharge, and give relevant health education to the patients and their family members.

**Outcome measures**

**Pain situation**
The VAS scoring method was used to score each patient before and after intervention, and a higher VAS score indicated milder pain.

**Psychological state**
SAS and SDS scoring methods were also used to score the patients before and after nursing intervention, separately, and higher SAS and SDS scores indicated worse psychological state.

**Medication compliance:**
- Taking medicine without authorization or taking it when the disease deteriorated was considered as non-compliance;
- Taking medicine regularly, but missing the medicine occasionally or taking the medicine without following the specified dosage was considered as partial compliance;
- Taking medicine strictly according to the doctor’s advice was considered as complete compliance.

The total compliance rate = (the number of patients with complete compliance+ the number of patients with partial compliance)/ the total number of patients x 100%.

**Life quality**
An EORTC Quality of Life Questionnaire (QLQ-C30) was adopted to evaluate each patient, which covered the symptom field and function field. A lower score in the symptom field indicated less obvious symptom, and a higher score in the function field indicated better function. The questionnaire was completed independently by each patient after he/she knew the meaning of each investigation content 3 months after discharge.

**Nursing satisfaction investigation**
The patients were asked to fill a nursing satisfaction questionnaire anonymously at discharge. The questionnaire adopted a percentile system, mainly covering satisfaction towards nursing staff, evaluation of nursing ability, and evaluation of self-benefits, which indicated a high satisfaction with a score between 80 and 90 points, basic satisfaction with a score between 60 and 79 points, and dissatisfaction with a score lower than 60 points.

The nursing satisfaction was recorded as (the number of patients with high satisfaction + the number of patients with satisfaction)/ the total number of patients x100%.

**Statistical analysis**
Statistical calculation using SPSS24.0 statistical software (Beijing Strong-Vinda Information Technology Co., Ltd.) and all graphs were drawn using Graphpad8 (Shenzhen SOFTHEAD Software Technology Co., Ltd.). The results were checked twice. Enumeration data were expressed as rate, and compared within groups using the chi-square test. Measurement data were expressed as the mean ± standard deviation, and compared between groups using the t-test. P<0.050 indicates a significant difference.

**Results**

**Comparison of general data**
There was no obvious difference between the two groups in clinical data including age, sex, TNM staging, education level, marital status, dietary habit, and drinking history (all P>0.050). Table 1.

<table>
<thead>
<tr>
<th></th>
<th>The Research group (n=38)</th>
<th>The control group (n=30)</th>
<th>t or χ²</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Y)</td>
<td>64.30±5.27</td>
<td>63.55±4.86</td>
<td>0.603</td>
<td>0.549</td>
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<tr>
<td>Sex</td>
<td></td>
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<td>0.002</td>
<td>0.965</td>
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<tr>
<td>Male</td>
<td>23 (60.53)</td>
<td>18 (60.00)</td>
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<tr>
<td>Female</td>
<td>15 (39.47)</td>
<td>12 (40.00)</td>
<td></td>
<td></td>
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<tr>
<td>TNM staging</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stage III</td>
<td>26 (68.42)</td>
<td>21 (70.00)</td>
<td>0.196</td>
<td>0.839</td>
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<tr>
<td>Stage IV</td>
<td>12 (31.58)</td>
<td>9 (30.00)</td>
<td></td>
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<tr>
<td>Differentiation</td>
<td></td>
<td></td>
<td>0.320</td>
<td>0.572</td>
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<tr>
<td>High differentiation</td>
<td>7 (18.42)</td>
<td>4 (13.33)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderate and low differentiation</td>
<td>31 (81.58)</td>
<td>26 (86.67)</td>
<td></td>
<td></td>
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<td>Marital status</td>
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<td>1.300</td>
<td>0.522</td>
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<td>Married</td>
<td>26 (68.42)</td>
<td>24 (80.00)</td>
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<td></td>
</tr>
<tr>
<td>Unmarried</td>
<td>3 (7.89)</td>
<td>1 (3.33)</td>
<td></td>
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<tr>
<td>Widowed</td>
<td>9 (23.68)</td>
<td>5 (16.67)</td>
<td></td>
<td></td>
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<tr>
<td>Education level</td>
<td></td>
<td></td>
<td>1.519</td>
<td>0.218</td>
</tr>
<tr>
<td>With diploma above junior high school</td>
<td>11 (28.95)</td>
<td>13 (43.33)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With junior high school diploma or below</td>
<td>27 (71.05)</td>
<td>17 (26.67)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dietary habit</td>
<td></td>
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<td>0.090</td>
<td>0.764</td>
</tr>
<tr>
<td>Light</td>
<td>24 (63.16)</td>
<td>20 (66.67)</td>
<td></td>
<td></td>
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<tr>
<td>Spicy</td>
<td>14 (36.84)</td>
<td>10 (33.33)</td>
<td></td>
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<tr>
<td>Drinking</td>
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<td>0.080</td>
<td>0.778</td>
</tr>
<tr>
<td>Yes</td>
<td>9 (23.68)</td>
<td>8 (26.67)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>29 (76.32)</td>
<td>22 (73.33)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Comparison of clinical data [n(%)].
**Comparison of pain situation**

Before intervention, there was no obvious difference in VAS score between the two groups (P>0.050), after intervention, the score of the study group was greatly lower than that of the control group (P<0.001). Figure 1.

**Psychological state assessment**

Before intervention, there was no significant difference in SAS and SDS scores between the two groups (both P>0.050), after intervention, the score of the study group was greatly lower than that of the control group (P<0.001). Figure 2.

**Comparison of medication compliance**

After intervention, the total medication compliance rate of the research group was greatly higher than that of the control group (P<0.05). Table 2.

<table>
<thead>
<tr>
<th>Group</th>
<th>The number of patients</th>
<th>Complete compliance</th>
<th>Partial compliance</th>
<th>Non-compliance</th>
<th>Overall compliance rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>The research group</td>
<td>38</td>
<td>23 (60.53)</td>
<td>14 (36.84)</td>
<td>1 (2.63)</td>
<td>97.37</td>
</tr>
<tr>
<td>The control group</td>
<td>30</td>
<td>16 (53.33)</td>
<td>8 (26.67)</td>
<td>6 (20.00)</td>
<td>80.00</td>
</tr>
<tr>
<td>χ²</td>
<td></td>
<td></td>
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<td></td>
<td>5.477</td>
</tr>
<tr>
<td>P-value</td>
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<td></td>
<td></td>
<td></td>
<td>0.019</td>
</tr>
</tbody>
</table>

Table 2: Comparison of medication compliance between the two groups [n(%)].

**Life quality assessment**

The average score of the research group in the symptom field was greatly lower than that of the control group in this field (11.50±4.28 vs. (14.24±5.04, P<0.050), but the average score of the research group in the function field was greatly higher than that of the control group in this field (71.67±5.14) vs. (66.45±4.85), P<0.001.

In addition, all other scores of the research group were better than those of the control group (P<0.05), except that there was no obvious difference in cognitive function between them. Table 3.

**Comparison of nursing satisfaction**

According to survey on nursing satisfaction of the two groups, the total nursing satisfaction of the research group was significantly higher than that of the control group (86.84% vs. 63.33%, P<0.050). Table 4.

<table>
<thead>
<tr>
<th>Group</th>
<th>The number of patients</th>
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<td>5.477</td>
</tr>
<tr>
<td>P-value</td>
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<td></td>
<td></td>
<td>0.019</td>
</tr>
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</table>

Table 3: Comparison of EORTC-QLQ-C30 score.

<table>
<thead>
<tr>
<th>Group</th>
<th>The number of patients</th>
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<th>Partial compliance</th>
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<td>8 (26.67)</td>
<td>6 (20.00)</td>
<td>80.00</td>
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Table 4: Comparison of nursing satisfaction [n(%)].
Discussion

Gastric cancer is a prevalent clinical malignant tumor, with high incidence and morbidity\(^{(15)}\). In recent years, due to changes in living standards and diet structure, the incidence of gastric diseases, especially gastric cancer, has significantly increased, posing a serious threat to the life safety of patients. According to statistics\(^{(16)}\), the global incidence and mortality of gastric cancer rank fifth and third among malignant tumors, respectively. Hao NB et al.\(^{(17)}\) have reported that there were about 26,000 new cases of gastric cancer and 10,000 estimated deaths in the United States in 2016. Gastric cancer mostly comes from gastric mucosa cells, and it has no obvious symptoms and signs in the early stage, which makes its diagnosis difficult, so many patients are already at advanced stage at the time of diagnosis\(^{(18)}\). Patients with advanced gastric cancer suffer severe pain, which compromises their life quality, and gives rise to great torture both physically and mentally to them. In order to effectively improve the life quality of patients and relieve their pain, it is necessary to take timely and effective nursing measures for them. However, there are still few nursing studies on advanced gastric cancer, and it is still impossible to determine which nursing method is most suitable for these patients. Therefore, this study is of great significance to the future clinical nursing of these patients, because it has analyzed the effects of targeted nursing measures on pain and life quality of patients with advanced gastric cancer.

In this study, after intervention, the pain of both groups was relieved, but the pain relief of the research group was more significant, indicating that targeted nursing has a significant impact on cancer pain of patients with gastric cancer. In addition, comparison of life quality score revealed that the research group experienced greatly better life quality than the control group, indicating that targeted nursing can effectively improve the life quality of patients with advanced gastric cancer and has a higher clinical application value. The difference of experimental results between the two groups may be due to the following fact: Targeted nursing paid more attention to the individual needs of patients and supplemented the patients’ energy lost due to tumor growth by guiding their diet, which increased their resistance and improved their body’s mobility\(^{(19)}\). In addition, medication knowledge was imparted and explained to patients to help them understand the importance of regular and standardized medication so that the cancer pain could be effectively controlled. In this study, the medication compliance of the research group was greatly higher than that of the control group, which can verify the above point. Additionally, the follow-up education after patients’ discharge would avoid the situation that treatment and nursing effect was weakened due to the lack of medical staff nearby, thus improving the prognosis of patients to the greatest extent. Severe pain and pessimism about death in patients with advanced gastric cancer may be important reasons for the decrease of survival desire and treatment enthusiasm\(^{(20-21)}\). One study has pointed out that patients with cancer often suffer from psychological problems such as anxiety and depression\(^{(22)}\), which can lead to the decline of patients’ life quality and treatment compliance. In this study, comparison of psychological state between the two groups revealed that before intervention, there was no obvious difference between the two groups in SAS and SDS scores, while after different interventions, the SAS and SDS scores of both groups decreased, and the decrease of the research group was more significant, which implied that the psychological state of the two groups had been effectively improved after nursing, but targeted nursing had better regulating effect on the psychological state of the patients. It may be due to the following reasons: Under targeted nursing, nursing staff were required to patiently explain the relevant knowledge and common problems of diseases to patients, so that patients can have a certain understanding of their own diseases, which can reduce patients’ fear of tumors and the pain caused by diseases. In addition, with effective communication, the nursing staff can actively intervene with it.

Moreover, the pain can be relieved so that patients’ body and mind were in a relaxed state. Finally, according to the survey results of nursing satisfaction of the two groups, the rate of high satisfaction in the research group was greatly higher than that in the control group, and the rates of dissatisfaction and basic satisfaction in the research group were greatly lower than those in the control group, which further confirmed the implementation value of targeted nursing in patients with advanced gastric cancer: Targeted nursing can effectively improve the overall impression of patients on medical staff and change their inherent views on hospitals, and is of great significance for the relief of disease symptoms and improvement of doctor-patient relationship. This study compared the application value of targeted nursing
and routine nursing for patients with advanced gastri
cancer, but there are still some deficiencies due
to limited conditions. For example, the sample size
carried out. In addition, the population of research
objects is relatively single, but targeted nursing or
routine nursing may have different performance in
different races. We will continuously improve our
experimental design and further study and discuss
the effect of targeted nursing on patients with ad-
vanced gastric cancer, so as to obtain more compre-
hensive experimental results for clinical reference.

To sum up, compared with routine nursing, tar-
geted nursing can more effectively relieve patients’
pain and improve their psychological state and life
quality, so it is worthy of promotion and application
in clinical practice.

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