Observational Study

Medicine

OPEN

Target nursing care on anxiety and depression in patients with gallbladder cancer during perioperative period

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Abstract

Background: This study retrospectively investigated the effects of target nursing care (TNC) on anxiety and depression in patients with gallbladder cancer (GBC) during the perioperative period.

Methods: This retrospective study analyzed the data of 80 patients with GBC during perioperative period. These records were divided into an intervention group (n = 40) or a control group (n = 40). All 80 patient records in both groups were administered routine nursing care (RNC). The patients in the intervention group also underwent TNC. The primary outcomes were depression (measured using the Hamilton Depression Scale, HAMD) and anxiety (assessed using the Hamilton Anxiety Scale, HAMA). The secondary outcomes were quality of life (assessed using the 36-Item Short Form Health Survey, SF-36) and adverse events. We collected and analyzed the outcome data before and after treatment.

Results: After treatment, patients in the intervention group showed more promising effects on depression (HAMD, $P < .01$) and anxiety (HAMA, $P < .01$) than those in the control group did. However, there were no significant differences in the quality of life before and after treatment. No TNC- or RNC-associated adverse events were reported in patient records.

Conclusion: This study found that TNC was more effective than RNC in relieving depression and anxiety. Future studies should be conducted to validate the present findings.

Abbreviations: GBC = gallbladder cancer, HAMA = Hamilton Anxiety Scale, HAMD = Hamilton Depression Scale, HQNC = high-quality nursing care, PPP = perioperative period, RNC = routine nursing care, SF-36 = The 36-Item Short Form Health Survey, TNI = target nursing care

Keywords: anxiety, depression, gallbladder cancer, routine nursing care, target nursing care

1. Introduction

Gallbladder cancer (GBC) is the most common distinct subset of biliary tract cancer worldwide.[1–3] It is a rare but highly lethal malignant disease with a worldwide incidence of 2 per 100,000 persons.[4–7] In addition, its incidence is relatively high, with a significant geographic variation.[8–13] The most frequent risk factors associated with GBC are cholelithiasis,[14] sex, age, obesity,[15] occupation,[16,17] chronic gallbladder inflammation,[18] and genetic predisposition.[19,20]

Previous studies have reported that complete surgical resection is one of the most effective modalities for patients with GBC.[21–23] Currently, it is still the only curative modality for GBC, with 5-year survival rates ranging from 0% to 12%, and a median survival time of 6.4 months.[24,25] However, approximately 66% of patients with GBC are processed to the recurrent disease within 2 years of resection.[26] Despite its promising effects, most patients with GBC during PPP often experience psychological disorders, such as depression and anxiety.[27–29] Fortunately, a variety of studies have reported that high-quality nursing care (HQNC) can benefit patients with GCB during PPP suffering from depression and anxiety.[27–29]

In this study, we compared TNC with RNC for the management of GCB during PPP in this study. We defined routine nursing care (RNC) as the combination of medication care, diet care, health advice for admission, preoperative and postoperative care, and instructions for the surgical approach. Based on RNC management, TNC also included psychotherapy and progressive

The authors have no funding or conflicts of interest to disclose.

The datasets generated during and/or analyzed during the current study are not publicly available, but are available from the corresponding author on reasonable request.

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How to cite this article: Liu S, Zhang L, Guan X-E, Zhang L, Wang R. Target nursing care on anxiety and depression in patients with gallbladder cancer during perioperative period. Medicine 2022;101:31(e29883).

Received: 14 May 2022 / Received in final form: 6 June 2022 / Accepted: 8 June 2022

http://dx.doi.org/10.1097/MD.0000000000029883

muscle relaxation therapy. However, there are insufficient data to support the effects of TNC for the treatment of depression and anxiety in patients during PPP. Thus, this retrospective study investigated the effects of TNC compared to RNC for the treatment of GCB patients during PPP with depression and anxiety.

2. Methods and Materials

2.1. Study design

This retrospective study included 80 eligible patients with GBC during PPP suffering from depression and anxiety. All patient records were obtained at the Affiliated Hongqi Hospital of Mudanjiang University between August 2018 and July 2020. We divided those patients into intervention and control groups according to the different treatment schedules they received, with 40 participants in each group. We collected and analyzed data before and after routine nursing care (RNC) or TNC. Written informed consent was obtained from each patient. However, ethical approval was waived in this retrospective study because we analyzed data from previous patient records.

2.2. Eligibility criteria

The inclusion criteria were pathologically diagnosed GBC, surgical resection, aged 20–75 years, presence of depression and/or anxiety before study management, Eastern Cooperative Oncology Group performance status ≤ 2, and GBC stage ≤ 2 (as assessed by Tumor-node-metastases staging system). However, exclusion criteria were anxiety and depression during or after the study period of TNC and RNC, lactation and pregnancy, other investigation drugs, presence of distant disease, and insufficient information and clinical data of patient records. Additionally, this study also excluded patient records of those who underwent medication for depression or anxiety within 4 weeks before this study, or those who were accompanied by RNC or CNC management period.

2.3. Management approach

All patients in both the intervention and control groups were administered RNC throughout PPP. This included medication care, diet care, health advice for admission, preoperative and postoperative care, and instructions for the surgical approach. Except for RNC, patient records in the intervention group also received TNC. It comprises psychotherapy and progressive muscle relaxation therapy. For psychotherapy, patients were instructed through presentation and face-to-face treatment to relieve their nervousness, anxiety, and depression. In addition, these patients underwent progressive muscle relaxation training during PPP.

2.4. Outcome measurements

The primary outcome was depression and anxiety. Depression was measured using the Hamilton Depression Scale (HAMD). Anxiety was evaluated using the Hamilton Anxiety Scale (HAMA). The secondary outcomes included quality of life and adverse events. Quality of life was assessed using the 36-Item Short-Form Health Survey (SF-36). It has 8 subscales and has been transformed into a range of 0 to 100. A higher score signifies a better quality of life or better health. All outcome data were analyzed before and after treatment.

2.5. Statistical analysis

SPSS software (SPSS 17.0, IBM Corp., Armonk, NY, USA) was utilized to analyze the data collected from the patient records. Continuous data were analyzed using the Student's *t*-test or Mann–Whitney *U*-test, and discontinuous data were analyzed using the χ^2 test or Fisher's exact test. Statistical significance was set at $P < .05$ (2-side).

3. Results

The general information and demographic characteristics of the patients are summarized in Table 1. There were no significant differences between the 2 groups in age, sex, race, ECOG performance, presenting features, cancer stage, chemotherapy, chemotherapy-associated adverse events, and co-morbidity between the 2 groups (Table 1).

Before treatment, there were no significant differences in depression (HAMD, $P = .54$; Table 2) and anxiety (HAMA, $P = .56$; Table 3). However, there were significant differences in depression (HAMD, $P < .01$; Table 2) and anxiety (HAMA, $P < .01$; Table 3) after treatment between the 2 groups.

Before treatment, there were no significant differences in the quality of life (physical function, $P = .57$; physical role, $P = .82$; body pain, $P = .56$; general health, $P = .41$; vitality, $P = .23$; social function, $P = .66$; emotional role, $P = .39$; and mental health, $P = .33$; Table 4) between the 2 groups. After treatment, there were no significant differences in (physical function, $P=0.11$; physical role, $P=0.29$; body pain, $P = .57$; general health, $P = .17$; vitality, $P = .29$; social function, $P = .21$; emotional role, $P = .09$; and mental health, $P = .25$; Table 5) between the 2 groups.

In terms of safety, no patient records reported any TNC or RNC-associated adverse events in this study.

4. Discussion

Globally, GBC is a rare, but aggressive malignancy of the biliary tract.[1–5] Epidemiological studies reported that its incidence and prevalence increase annually.[30–32] Thus, the management of this fatal disease is urgent. Surgical resection is the most effective treatment for GBC. However, patients with GBC during PPP

Table 1

Comparison of patient characteristics between the 2 groups.

Characteristics	Intervention group (n = 40)	Control group (n = 40)	*P*
Age (y)	55.4 (8.2)	57.1 (8.8)	.37
Gender			
Male	16 (40.0)	21 (52.5)	.26
Female	24 (60.0)	19 (47.5)	–
Race (Han ethnicity)	40 (100.0)	40 (100.0)	–
ECOG performance			
0	5 (12.5)	4 (10.0)	.72
1	22 (55.0)	25 (62.5)	.50
2	13 (32.5)	11 (27.5)	.63
Stage			
I	28 (70.0)	25 (62.5)	.48
II	12 (30.0)	15 (37.5)	–
Presenting features			
Pain	40 (100.0)	40 (100.0)	–
Vomiting	7 (17.5)	9 (22.5)	.58
Weight loss	9 (22.5)	10 (25.0)	.79
Co-morbidities			
Type 2 diabetes	6 (15.0)	8 (20.0)	.56
Hypertension	7 (17.5)	5 (12.5)	.53
Hypothyroidism	10 (25.9)	12 (30.0)	.62
Chemotherapy			
Oxaliplatin	11 (27.5)	15 (37.5)	.34
Fluorouracil	16 (40.0)	12 (30.0)	.35
Carboplatin	14 (35.0)	12 (30.0)	.63
Cisplatin	17 (42.5)	18 (45.0)	.82
Chemotherapy-associated AEs			
Nausea/vomiting	21 (52.5)	24 (60.0)	.50
Diarrhea	14 (35.0)	12 (30.0)	.63
Neutropenia	9 (22.5)	11 (27.5)	.61
Leukopenia	8 (20.0)	7 (17.5)	.77
Rash	4 (10.0)	6 (15.0)	.50

Data are present as mean±standard deviation or number (%).

AEs = adverse events, ECOG = Eastern Cooperative Oncology Group.

Table 2

Comparison of depression between the 2 groups.

HAMD	Intervention group (n = 40)	Control group (n = 40)	*P*
Pretreatment	23.5 (3.8)	24.0 (3.5)	.54
Posttreatment	7.9 (3.3)	10.2 (4.1)	<.01
Change from pretreatment	–15.6 (–17.8, –12.9)	–13.8 (–16.3, –10.6)	
Difference between2 groups		–1.8 (–2.6, –1.2)	<.01

Data are present as mean (range).
HAMD = Hamilton Depression Scale.

Table 3

Comparison of anxiety between the 2 groups.

HAMA	Intervention group (n = 40)	Control group (n = 40)	*P*
Pretreatment	21.9 (4.0)	22.4 (3.7)	.56
Posttreatment	8.2 (3.1)	10.6 (3.5)	<.01
Change from pretreatment	–13.7 (–15.4, –11.0)	–11.7 (–13.6, –9.2)	
Difference between2 groups		–2.0 (–2.8, –1.3)	<.01

Data are present as mean (range).
HAMA = Hamilton Anxiety Scale.

Table 4

Comparison of SF-36 pretreatment between the 2 groups.

SF-36	Intervention group (n = 40)	Control group (n = 40)	*P*
Physical function	63.5 (5.7)	62.8 (5.2)	.57
Physical role	32.6 (6.2)	32.9 (5.5)	.82
Body pain	33.9 (5.9)	34.7 (6.4)	.56
General health	38.5 (4.0)	37.8 (3.6)	.41
Vitality	40.1 (4.7)	41.4 (5.0)	.23
Social function	42.8 (5.5)	43.3 (4.7)	.66
Emotional role	36.7 (5.2)	35.6 (6.1)	.39
Mental health	38.8 (3.9)	37.9 (4.4)	.33

Data are present as mean ± standard deviation.
SF-36 = The 36-Item Short Form Health Survey.

Table 5

Comparison of SF-36 post-treatment between 2 groups.

SF-36	Intervention group (n = 40)	Control group (n = 40)	*P*
Physical function	79.5 (4.3)	77.8 (5.1)	.11
Physical role	70.0 (5.6)	68.6 (6.2)	.29
Body pain	68.5 (4.5)	69.1 (5.0)	.57
General health	61.6 (6.2)	59.8 (5.4)	.17
Vitality	62.3 (6.5)	60.7 (7.1)	.29
Social function	75.2 (5.8)	73.6 (5.6)	.21
Emotional role	80.1 (4.4)	78.3 (5.2)	.09
Mental health	76.2 (5.2)	74.9 (4.9)	.25

Data are present as mean ± standard deviation.
SF-36, The 36-Item Short Form Health Survey.

often experience psychological disorders, such as depression and anxiety.

Previous studies have reported that HQNC can relieve depression and anxiety in patients with GBC during PPP.[27–29] One study assessed the effects of HQNC (health guidance after admission, psychotherapy, physical and mental care, and nursing care before and after surgery) for depression and anxiety in patients with GBC during PPP.[27] The other study explored the effects of HQNC (admission guidance, health education, psychological care, and nursing care before and after surgery) for depression and anxiety relief in patients with GBC during PPP.[28] Another study evaluated the effects of HQNC (health education, music therapy, and whole-body muscle relaxation training) on anxiety and depression decrease in perioperative patients with GBC.[29] The results of all 3 studies exerted better effects of HQNC than RNC for the treatment of patients with GBC during PPP.[27–29] The present study investigated the effects and safety of TNC (consisting of RNC, psychotherapy, and progressive muscle relaxation therapy) for depression and anxiety in patients with GBC during PPP. The results of previous studies are consistent with this study.

In this retrospective study, we analyzed the data of 80 patients with GBC during PPP. Our results showed that patients in the intervention group achieved better outcomes in depression and anxiety than those in the control group, indicating that TNC is more effective than RNC for the treatment of depression and anxiety in patients with GBC during PPP. However, there were no significant differences in quality of life and TNC- or RNC-associated adverse events.

This retrospective study has several limitations. First, compared to the prospective study, this retrospective study only harvested and analyzed data from patient records. Second, all data were collected from one center of the Affiliated Hongqi Hospital of Mudanjiang Medical University. Third, this study only analyzed data during PPP. Future studies should investigate its effects on long-term follow-up.

5. Conclusion

This study has shown that TNC may be a more effective modality than RNC for relieving depression and anxiety in patients with GBC during PPP. Future studies are needed to validate the current results.

Author contributions

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