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 the 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 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...
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 GBC 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 Mudanjia 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 χ² 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, $P = .77$; 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.[60–62] Thus, the management of this fatal disease is urgent. Surgical resection is the most effective treatment for GBC. However, patients with GBC during PPP

| 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)               | .82 |
| 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)               | .57 |
| Presenting features |                      |                        |     |
| Pain            | 40 (100.0)                | 40 (100.0)              | .82 |
| 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.
Pretreatment 21.9 (4.0) 22.4 (3.7) .56
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) <.01
Difference between 2 groups -1.8 (-2.6, -1.2) <.01

Data are present as mean ± standard deviation.

Comparison of SF-36 pretreatment between 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 (5.3)             | <.01  |
| Change from pretreatment | -13.7 (-15.4, -11.0) | -11.7 (-13.6, -9.2)   | <.01  |
| Difference between 2 groups | -2.0 (-2.8, -1.3)     |                      | <.01  |

Data are present as mean (range).

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 (6.4)             | .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.

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

often experience psychological disorders, such as depression and anxiety.

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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