

Application Value of Nursing Intervention for Patients with Pancreatitis After Endoscopic Retrograde Cholangiopancreatography (ERCP)

Haixia Shan, Wei Zhou, Yanyan Cai, Fang Zhou, Yuling Hu*

The 71st Group Army Hospital of the People's Liberation Army, Xuzhou 221000, Jiangsu Province, China

*Corresponding author: Yuling Hu, 15951460065@163.com

Copyright: © 2023 Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0), permitting distribution and reproduction in any medium, provided the original work is cited.

Abstract: *Objective:* To explore and analyze the application value of nursing intervention for patients with pancreatitis after endoscopic retrograde cholangiopancreatography (ERCP). *Methods:* From May 2022 to May 2023, 100 patients with pancreatitis after ERCP who were admitted to the General Surgery Department of our hospital were selected as the research objects, they were divided into a research group and a general group by flipping coins, with 50 cases in each group. The research group received nursing intervention, and the general group received general nursing. The postoperative index recovery time, quality of life, and emotional performance were compared between the two groups. *Results:* The blood amylase recovery time, abdominal pain recovery time, white blood cell recovery time, and hospitalization time in the research group were significantly lower than those in the general group ($P < 0.05$). Before intervention, the physical function, social factors, physiological performance, emotional state, and other quality of life indicators were compared between the groups, and there was no statistically significant difference ($P > 0.05$); after intervention, the mentioned quality of life indicators were significantly better than that of the general group ($P < 0.05$). Before intervention, the Self-Rating Anxiety Scale (SAS) and Self-Rating Depression Scale (SDS) scores between the groups were compared, and there was no statistically significant difference ($P > 0.05$); after intervention, the SAS and SDS scores of the research group were significantly better than those of the general group ($P < 0.05$). *Conclusion:* The application of nursing intervention in patients with pancreatitis after ERCP has high clinical value and specific practical significance.

Keywords: Endoscopic retrograde cholangiopancreatography (ERCP); Concurrent pancreatitis; Nursing intervention

Online publication: November 27, 2023

1. Introduction

Endoscopic retrograde cholangiopancreatography (ERCP) is a method to check the abnormalities of the pancreas, gallbladder, and other organs. An endoscope is inserted and a contrast agent is injected for inspection^[1,2]. Theoretically, this examination method is non-invasive, has a high accuracy rate in diagnosing pancreas and gallbladder diseases, and can also be used for surgical treatment^[3]. However, complications such as pancreatitis can occur after ERCP, and this will threaten the patient's health. The disease progresses rapidly, leading to

systemic inflammatory reactions, and even causing death^[4,5]. Carrying out nursing intervention for patients with pancreatitis after ERCP and carrying out intervention measures according to the patient's condition may promote recovery and improve the patient's prognosis^[6]. This article aims to study and analyze the application value of nursing intervention for patients with pancreatitis after ERCP.

2. General information and methods

2.1. General information

From May 2022 to May 2023, 100 patients with pancreatitis after ERCP who were admitted to the General Surgery Department of our hospital were taken as the research objects, they were divided into the research group and the general group by flipping coins, with 50 cases in each group. In the research group, there were 31 males and 19 females, aged 29–49 years, with an average age of 40.24 ± 1.36 years. In the general group, there were 30 males and 20 females, aged 30–49 years, with an average age of 40.35 ± 1.31 years. There was no statistically significant difference ($P > 0.05$) in the general information such as gender and age between the groups.

Inclusion criteria: (1) Patients who signed an informed consent, (2) patients with retrograde cholangiopancreatography indications and postoperative pancreatitis.

Exclusion criteria: (1) Patients with hematological diseases, (2) patients with organ failure, (3) patients with autoimmune diseases.

2.2. Methods

The general group received general nursing care: before the operation, the patients were asked to fast and drink, the secretion of gastric acid was intervened, a gastric tube was indwelled, and the gastrointestinal decompression was connected. Patients continued to fast after the operation, with intravenous fluid rehydration provided, and the energy required by the body supplemented.

The research group implemented nursing intervention as follows:

- (1) Preoperative intervention: Nursing staff evaluated the patient's examination indicators and vital signs, and observed the patient's condition. The patient was fasted for 8 hours before the operation, and 5 mg of diazepam, 20 mg of anisodamine, and 25 g of pethidine were injected intravenously. The contrast agent for this examination was iopromide.
- (2) Nursing during the operation: The operation of the nursing staff was standardized. All operations were carried out under sterile conditions. Based on the actual situation, some gentamicin was added to the contrast medium according to the doctor's advice to reduce postoperative infection. The contrast medium should be injected slowly to avoid damage to the patient's tissue. The surgical instruments were checked to ensure the integrity of the surgical instruments and prevent damage to the tissue during the operation. Normal saline was prepared, the tissues with unclear field of view were washed away, and the apparent field of view of the endoscope was ensured. After the operation, the contrast agent was sucked out to control the residue of the contrast agent and prevent postoperative pancreatitis.
- (3) Postoperative intervention: The patient was kept fasting for about two days. The blood amylase index of the patient was checked to assess the probability of adverse reactions. If any abnormalities occur, it was reported to the doctor in time. After the operation, the patient was allowed to rest in bed, medication was taken as prescribed by the doctor, and nutrition was supplemented through intravenous injection. If the patient is an elderly group, the observation of vital signs should be strengthened,

and gastrointestinal decompression should be given. Patients with drainage tubes should be cleaned regularly to prevent the drainage tubes from clogging, causing infection or obstruction. After leaving the hospital, the patient was allowed to eat a healthy diet and light food without overeating, keep a good rest, avoid smoking and drinking, and regularly check the blood amylase in the hospital.

2.3. Observation indicators

The recovery time of postoperative indicators was compared between the groups, including the recovery time of blood amylase, the recovery time of abdominal pain, the recovery time of white blood cell count, and the length of hospitalization.

The quality of life between the groups was compared and evaluated with the Brief Quality of Life Scale (SF-36), including physical function, social factors, physiological performance, and emotional state, each with 100 points.

Emotional performance was compared between groups, including SAS (Self-Rating Anxiety Scale) and SDS (Self-Rating Depression Scale).

2.4. Statistical analysis

SPSS21.0 statistical software was selected to process and analyze the data; the count data were expressed by the number of cases (n) and percentage (%), the χ^2 test was implemented, the mean \pm standard deviation (SD) expressed the measurement data, and the *t*-test was implemented, $P < 0.05$ was considered statistically significant.

3. Results

3.1. Comparison of the postoperative index recovery time between the research group and general group

The blood amylase recovery time, abdominal pain recovery time, white blood cell recovery time, and hospitalization time in the research group were significantly lower than those in the general group ($P < 0.05$), as shown in **Table 1**.

Table 1. The comparison of postoperative index recovery time between groups (mean \pm SD, days)

Group	Number of cases	Blood amylase recovery time	Abdominal pain recovery time	White blood cell recovery time	Hospitalization time
Research group	50	1.54 \pm 0.56	0.56 \pm 0.25	4.57 \pm 1.32	10.37 \pm 2.15
General group	50	4.57 \pm 1.63	0.98 \pm 0.21	8.65 \pm 1.55	14.37 \pm 4.59
<i>t</i> -value	-	12.4311	9.0961	14.1705	5.5803
<i>P</i> value	-	0.0000	0.0000	0.0000	0.0000

3.2. Comparison of the quality of life between the research group and the general group

Before the intervention, the physical function, social factors, physiological performance, emotional state, and other quality of life indicators were compared between the groups, and there was no statistically significant difference ($P > 0.05$); after the intervention, the physical function, social factors, physiological performance, emotional state, and other quality of life indicators of the research group were significantly better than that of the general group ($P < 0.05$), as presented in **Table 2**.

Table 2. The comparison of the quality of life between the groups (mean ± SD)

Group	Number of cases	Physical function		Social factors		Physiological performance		Emotional state	
		Before intervention	After intervention	Before intervention	After intervention	Before intervention	After intervention	Before intervention	After intervention
Research group	50	66.21 ± 4.52	85.24 ± 3.26	65.21 ± 4.29	84.36 ± 3.15	67.24 ± 4.75	87.55 ± 3.15	67.51 ± 4.21	86.24 ± 3.24
General group	50	66.35 ± 4.26	75.21 ± 4.55	65.37 ± 4.61	74.98 ± 4.16	67.35 ± 4.86	76.34 ± 4.25	67.48 ± 4.35	77.21 ± 4.65
<i>t</i> -value	-	0.1593	12.6708	0.1796	12.7109	0.1144	14.9840	0.0350	11.2663
<i>P</i> value	-	0.8737	0.0000	0.8578	0.0000	0.9091	0.0000	0.9721	0.0000

3.3. Comparison of the emotional performance of the research group and the general group

Before the intervention, the SAS and SDS scores between the groups were compared, and there was no statistically significant difference ($P > 0.05$); after the intervention, the SAS and SDS scores of the research group were significantly better than those of the general group ($P < 0.05$), as demonstrated in **Table 3**.

Table 3. The comparison of emotional performance between groups (mean ± SD)

Group	Number of cases	SAS score		SDS score	
		Before intervention	After intervention	Before intervention	After intervention
Research group	50	47.23 ± 4.25	33.21 ± 3.25	46.27 ± 4.21	34.15 ± 3.57
General group	50	47.65 ± 4.36	38.97 ± 4.65	47.53 ± 4.55	39.68 ± 4.25
<i>t</i> -value	-	0.4877	7.1792	1.4327	7.0450
<i>P</i> value	-	0.6268	0.0000	0.1538	0.0000

4. Discussion

Endoscopic retrograde cholangiopancreatography combines minimally invasive techniques, which can be used for the diagnosis and treatment of diseases. After treatment, the recovery period of patients is very short with strong clinical advantages^[7]. Although ERCP is a non-invasive examination method, postoperative patients still face complications. The most common postoperative complication is pancreatitis, with an incidence rate of 9.5%^[8,9]. Pancreatitis is not a disease caused by infection. Its first symptom is acute abdominal pain, followed by symptoms such as nausea and vomiting^[10,11]. Pancreatitis after ERCP will increase the damage to the patient, and even more serious complications will occur^[12]. Carrying out nursing intervention for such patients can prevent the occurrence of complications of ERCP and protect the safety of patients after surgery^[13]. In recent years, nursing work is no longer limited to clinical nursing work. In order to meet the requirements of patients, the nursing model is constantly updated and improved. Nursing intervention aims to further enrich the content of nursing on the premise of traditional nursing measures^[14]. Intervention is carried out in three different stages: before, during, and after the operation. In the first stage, the patient's condition is evaluated, preoperative preparations are made, and drugs are injected according to the doctor's advice. In the second stage, the aseptic concept of the operation is strengthened to ensure safety during and after the operation, and to prevent pancreatitis. In the third stage, the patients were kept fasting, the incidence of postoperative complications was evaluated according to relevant indicators, nutritional supplements were given intravenously, and special treatment was given to older patients^[15].

The experimental results are as follows: the recovery time of blood amylase, the recovery time of abdominal pain, the recovery time of white blood cell count, and the length of hospital stay in the research group were significantly lower than those in the general group ($P < 0.05$). Before the intervention, the physical function, social factors, physiological performance, emotional state, and other quality of life indicators were compared between the groups, and there was no statistically significant difference ($P > 0.05$); after the intervention, the physical function, social factors, physiological performance, emotional state, and other quality of life indicators in the research group were significantly better than that in the general group ($P < 0.05$). Before the intervention, the SAS and SDS scores between the groups were compared, and there was no statistically significant difference ($P > 0.05$); after the intervention, the SAS and SDS scores of the research group were significantly better than those of the general group ($P < 0.05$). After the nursing intervention was carried out, the patients' indicators recovered relatively well, the quality of life was greatly improved, and patients maintained a good psychological state.

5. Conclusion

To sum up, the implementation of nursing intervention for pancreatitis after ERCP can quickly recover the physical indicators, and improve the quality of life and emotional performance. It is worthy of widespread clinical application and promotion.

Disclosure statement

The authors declare no conflict of interest.

References

- [1] Chen Z, Kang L, Song J, et al., 2023, The Relationship Between the Expression of TFEB, TREM-1 in Peripheral Blood and the Condition of Patients with Pancreatitis After Endoscopic Retrograde Cholangiopancreatography. *Journal of Jujie Surgery*, 32(08): 692–696.
- [2] Chen L, Zheng L, Chen Z, 2023, Clinical Application of Detachable Titanium Clip Combined with Rubber Band-Assisted Endoscopic Retrograde Cholangiopancreatography in Difficult Bile Duct Intubation. *Chinese Journal of Endoscopy*, 29(07): 73–78.
- [3] Jin H, Sun R, Wu D, et al., 2022, Effect of Endoscopic Retrograde Cholangiopancreatography on AMS Level and Intestinal Function Recovery in Patients with Acute Biliary Pancreatitis with Cholangitis. *Western Medicine*, 34(09): 1371–1375.
- [4] Zhu J, Huang Z, Wang G, 2022, Analysis of the Effect of Different Auxiliary Intubation on the Intubation Effect of Difficult Endoscopic Retrograde Cholangiopancreatography and Postoperative Acute Pancreatitis. *Hebei Medicine*, 28(07): 1135–1141.
- [5] Zhang L, Li L, 2022, The Application Effect of Push-Press and Movement-Jing Instrument Combined with Cluster Nursing Based on the Concept of Rapid Recovery in Patients with Common Bile Duct Stones Undergoing Endoscopic Retrograde Cholangiopancreatography. *Medical Equipment*, 35(14): 114–117.
- [6] Wang D, 2021, Effect of Predictive Nursing on Postoperative Complications of Endoscopic Retrograde Cholangiopancreatography in Patients with Choledocholithiasis. *Clinical Medical Engineering*, 28(08): 1133–1134.
- [7] Li J, Zhang Q, Li Q, 2021, Study on the Application Effect of Preventive Nursing in Endoscopic Retrograde Cholangiopancreatography Complicated with Acute Pancreatitis. *Guizhou Medicine*, 45(07): 1155–1156.

- [8] Wang J, Guo S, Zhou J, et al., 2021, The Application Effect of Nursing Intervention Based on the Concept of Rapid Recovery in Patients with Cholelithiasis After Endoscopic Retrograde Cholangiopancreatography. *Henan Medical Research*, 30(21): 4010–4013.
- [9] Hao Y, Hu C, Cao G, 2020, Analysis of Risk Factors and Preventive Measures for Pancreatitis in Patients After Endoscopic Retrograde Cholangiopancreatography. *Nursing Practice and Research*, 17(16): 21–23.
- [10] Jin C, 2020, The Application of the Trinity Nursing Model Based on “Doctor-Patient-Family” in Endoscopic Retrograde Cholangiopancreatography for Elderly Patients with Choledocholithiasis. *China Practical Medicine*, 15(23): 167–169.
- [11] Xiang Q, Lei C, 2020, Perioperative Nursing Experience of Endoscopic Retrograde Cholangiopancreatography Combined with Laparoscopic Sequential Treatment of Choledocholithiasis Combined with Gallbladder Stones. *Contemporary Nurses (Late Journal)*, 27(01): 58–60.
- [12] Zhang H, Cao J, Zeng J, et al., 2019, The Application Effect of Perioperative Intensive Cognitive Nursing Intervention in Patients Undergoing Endoscopic Retrograde Cholangiopancreatography. *Clinical Medicine Research and Practice*, 4(31): 163–165.
- [13] Jian Y, Zhao L, Feng J, et al., 2019, Nursing of a Case of Acute Obstructive Suppurative Cholangitis Treated with Emergency Endoscopic Retrograde Cholangiopancreatography. *Chinese Medicine and Clinic*, 19(02): 346–347.
- [14] You Y, 2018, Observation on the Effect of Predictive Nursing in Preventing Postoperative Complications of Endoscopic Retrograde Cholangiopancreatography in Patients with Choledocholithiasis. *Electronic Journal of Clinical Medicine Literature*, 5(71): 109.
- [15] Wang F, Tan W, He L, et al., 2018, Observation on the Effect of Predictive Nursing in Preventing Postoperative Complications of Endoscopic Retrograde Cholangiopancreatography in Patients with Choledocholithiasis. *Nursing Practice and Research*, 15(02): 83–84.

Publisher's note

Bio-Byword Scientific Publishing remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.