Journal of Clinical and Nursing Research, 2025, Volume 9, Issue 6
http://ojs.bbwpublisher.com/index.php/JCNR
Online ISSN: 2208-3693
Print ISSN: 2208-3685

Study on the Effect of Early Postoperative Enteral Nutrition in the Nursing Care of Elderly Patients with Gastric Cancer

Wenwen Li, Wenping Hou, Jin Jiao, Yanru Song, Dan Hong, Shenyong Su, Jin Song*

Hebei University Affiliated Hospital, Baoding, Hebei, China

***Corresponding author:** *Jin Song, 2705251562@qq.com*

Abstract: *Objective:* To study the application effect of early postoperative enteral nutrition in the nursing care of elderly patients with gastric cancer. *Methods:* Sixty elderly patients with gastric cancer admitted to the hospital from January 2022 to January 2024 were selected and divided into groups according to the random number table method. The control group (n = 30) received routine nursing after surgery, while the observation group (n = 30) received early enteral nutrition nursing after surgery. The perioperative indexes, nutritional indexes before and after nursing, humoral and cellular immune indexes before and after nursing, gastrointestinal hormone levels before and after nursing, and the incidence of postoperative complications were compared between the two groups. *Results:* The perioperative indexes of the observation group were better than those of the control group ($P < 0.05$). Before nursing, there was no significant difference in the nutritional indexes between the two groups ($P > 0.05$). After nursing, the nutritional indexes of the observation group were better than those of the control group ($P < 0.05$). Before nursing, there was no significant difference in the humoral and cellular immune indexes between the two groups ($P > 0.05$). After nursing, the humoral and cellular immune indexes of the observation group were better than those of the control group ($P < 0.05$). Before nursing, there was no significant difference in the gastrointestinal hormone levels between the two groups ($P > 0.05$). After nursing, the gastrointestinal hormone levels of the observation group were better than those of the control group ($P < 0.05$). The incidence of postoperative complications in the observation group was lower than that in the control group ($P < 0.05$). *Conclusion:* For elderly patients with gastric cancer, early enteral nutrition nursing after surgery can improve their nutritional indexes and gastrointestinal hormone levels, enhance their immune ability, and prevent the incidence of postoperative complications, with good effects.

Keywords: Early enteral nutrition care; Elderly patients; Gastric cancer; Nutritional indicators; Gastrointestinal hormones

Online publication: July 7, 2025

1. Introduction

Gastric cancer is a common malignant tumor of the digestive system in current clinical practice. In recent years, its

incidence in China has been showing a continuous upward trend, posing a serious threat to the health of the elderly population in particular. This disease not only significantly reduces the patients' quality of life but also directly endangers their lives. Currently, the clinical treatment mainly adopts a comprehensive treatment plan centered on surgery, controlling the tumor progression through radical resection. However, the operation for gastric cancer is complex, and the postoperative rehabilitation period is long. Patients face great psychological pressure and economic burden during the perioperative period. Coupled with the common malnutrition among gastric cancer patients, these factors together lead to a significantly increased risk of postoperative complications. Therefore, it is particularly important to implement scientific and effective nursing interventions for elderly patients with gastric cancer after surgery. Scientific nutritional support interventions play a crucial role in the postoperative rehabilitation process of gastric cancer patients. Through reasonable nutritional management, it can not only effectively promote the recovery of patients' gastrointestinal function but also maintain the normal nutritional metabolism level of the body, thereby enhancing the patients' immune function and improving the clinical prognosis. In clinical practice, nutritional support mainly uses two routes: enteral and parenteral. Among them, enteral nutritional support is more in line with the physiological needs of the human body, which can gradually restore the digestive tract function and ensure that patients receive sufficient nutritional supply. This nutritional intervention method helps to rebuild the patients' immune defense system and maintain a good nutritional status, creating favorable conditions for postoperative rehabilitation [1]. Therefore, this paper selects 60 elderly patients with gastric cancer admitted to the hospital from January 2022 to January 2024, aiming to analyze the application effect of early postoperative enteral nutritional support.

2. Information and methods

2.1. General information

Sixty elderly patients with gastric cancer admitted to the hospital from January 2022 to January 2024 are selected and divided into groups according to the random number table method. The control group (n = 30) received routine nursing after surgery, including 18 male patients and 12 female patients, aged 60–80 years old with an average age of (70.35 ± 3.19) years, weighing 51.35–67.65 kg with an average body weight of (59.65 ± 4.16) kg, having a disease course of 1–7 years with an average disease course of (4.20 ± 1.16) years, and the pathological types were as follows: 18 cases of moderately-differentiated adenocarcinoma, 10 cases of undifferentiated adenocarcinoma, and 2 cases of poorly-differentiated adenocarcinoma. The observation group (n = 30) received early enteral nutrition nursing after surgery, including 16 male patients and 14 female patients, aged 60–82 years old with an average age of (70.98 ± 3.37) years, weighing 50.16–69.91 kg with an average body weight of (59.91 ± 4.46) kg, having a disease course of 1–9 years with an average disease course of (6.38 ± 1.34) years, and the pathological types were as follows: 16 cases of moderately-differentiated adenocarcinoma, 12 cases of undifferentiated adenocarcinoma, and 2 cases of poorly-differentiated adenocarcinoma. There was no significant difference in general data between the two groups ($P > 0.05$).

The inclusion criteria of the study are: (1) Diagnosed with gastric cancer after comprehensive diagnosis; (2) Complete clinical data; (3) Scored 70 points or above in the Karnofsky Performance Status (KPS) assessment; (4) Physically able to tolerate chemotherapy; (5) The patients and their families were informed about this study and signed the consent form; (6) Aged 60 years or above. The exclusion criteria included: (1) Gastric cancer with distant metastasis; (2) Complicated with organic diseases of important organs such as the heart; (3) Complicated

with severe malnutrition; (4) Complicated with malignant tumors in other systems; (5) Complicated with mental diseases.

2.2. Methods

2.2.1. Control group

Routine nursing is adopted after surgery. Post-operatively, all vital signs of the patients needed to be continuously monitored to ensure they are in a stable state. In terms of diet management, patients are initially guided to have a liquid diet. After the intestinal function recovered, the anus had normal exhaust, and the bowel sounds disappeared, the diet is gradually transitioned to a regular diet. Nutritionally balanced meals are prepared according to the individual conditions of the patients to meet their daily energy requirements. In terms of psychological intervention, through enhanced doctor-patient communication, targeted measures are taken to relieve the patients' negative emotions such as anxiety and depression, thereby improving their treatment cooperation and compliance with medical advice [2].

2.2.2. Observation group

Enteral nutrition support nursing is adopted after surgery:

(1) Enteral nutrition support: When implementing nutrition support through duodenal intubation, the intubation position needed to be accurately located under the guidance of imaging equipment and properly fixed at the gastrointestinal anastomosis. Starting 13 hours after the surgery, a mixed solution of glucose and potassium chloride is slowly infused through the nutrition tube to promote the recovery of the patients' gastrointestinal peristalsis function. During the treatment process, medical staff needed to closely monitor the patients' clinical manifestations. If discomfort symptoms such as abdominal pain, abdominal distension, or diarrhea occur, they should be dealt with promptly. At the same time, the infusion dosage and speed are dynamically adjusted according to the individual tolerance of the patients. The position and patency of the nutrition tube are regularly checked to prevent complications such as catheter displacement or secretion blockage, ensuring the safety and effectiveness of the nutrition support treatment.

(2) Nursing measures

(a) Post-operative dietary therapy nursing: Starting 48 hours after the surgery, a dietary nutrition intervention plan should be gradually implemented for the patients. The patients' families are guided to prepare light, easily digestible, and low-irritation diets, such as tremella soup and rock sugar Sydney [3]. At the same time, it is recommended to appropriately consume nutritious diets with warm-tonifying effects, including crucian carp soup and wolfberry porridge. Through scientific dietary conditioning, the nutritional imbalance state caused by surgical trauma in the patients is improved. This targeted dietary therapy plan could not only effectively supplement the nutrients needed by the body but also promote the recovery of hematopoietic function and contribute to the improvement of the peripheral blood cell level.

(b) Rehabilitation nursing: Eight hours after the surgery, after the patient is fully conscious, the nursing staff should explain in detail the specific plan of postoperative rehabilitation training for gastric cancer and its clinical significance. With the cooperation of the family members, encourage the patient to actively participate in functional exercises. Initially, assist the patient to perform passive limb movements in bed, including basic movements such as turning over and sitting up. Each training

session should not exceed 30 minutes, and the exercise intensity should be adjusted individually according to the patient's tolerance, aiming to promote limb blood circulation. Starting from 48 hours after the surgery, guide the patient to gradually carry out joint flexion and extension training, focusing on exercising the range of motion of the upper-limb joints. At the same time, conduct systematic respiratory function training to improve cardiopulmonary function reserve [4]. As the recovery progresses, gradually guide the patient to resume daily living ability training, including basic activities such as dressing, personal hygiene, and eating. Promote the gradual recovery of various body functions through a phased rehabilitation plan.

(c) Massage nursing: Implement systematic massage treatment for the patient using the techniques of acupoint pressing combined with massage. Focus on using techniques such as finger-pressing and palm-kneading to relax the whole body's muscles. Each treatment session should be strictly controlled within 15 minutes, with the appropriate degree of soreness for the patient as the standard. During the operation, accurately control the intensity of the applied force and focus on stimulating specific meridian points. Especially increase the frequency of abdominal massage. Promote gastrointestinal peristalsis through rhythmic kneading and pressing techniques, thus effectively improving the function of the digestive system.

(d) Intubation nursing: When performing intubation, nursing staff should use gentle techniques to ensure accurate and proper actions. After intubation, the catheter should be properly fixed to prevent displacement or accidental removal. During the period when no nutrient solution is being infused, the gastric tube should be flushed with normal saline once every 3 hours to maintain the negative pressure inside the catheter and effectively prevent tube blockage. During enteral nutrition support, the condition of the catheter should be closely monitored, including observing for signs of bleeding and changes in the properties of the drainage fluid. Once any abnormal situation is detected, corresponding treatment measures should be taken immediately to ensure the safety and effectiveness of the treatment process [5].

2.3. Observation indicators

(1) Perioperative indicators: The indicators include the recovery time of gastrointestinal function, flatus time, diet recovery time, length of hospital stay, defecation time, nasogastric tube indwelling time, recovery time of bowel sounds, and total drainage volume of the nasogastric tube.

(2) Nutritional indicators before and after nursing: The indicators include TP, ALB, and PA.

(3) Humoral and cellular immune indicators before and after nursing: Humoral immune indicators include IgA, IgM, and IgG. Cellular immune indicators include CD3+, CD4+, CD8+, and CD4+/CD8+.

(4) Gastrointestinal hormone levels before and after nursing: It includes motilin and serum ghrelin. Before and after nursing, 12 ml of fasting venous blood is drawn from the patients and centrifuged at a speed of 3000 r per minute for 15 minutes. The enzyme-linked immunosorbent assay is used for detection [6].

(5) Incidence of postoperative complications: This includes pulmonary infection, gastrointestinal dysfunction, pressure injury, and incision infection.

2.4. Statistical processing

SPSS 25.0 statistical software is used, where mean + standard deviation (±s) is used to represent the measurement

information, which is checked by calculating the t-value, and rate (%) is used to represent the count information, which is checked by calculating the X^2.

3. Results

3.1. Comparison of various perioperative indicators

All perioperative indicators of patients in the observation group were better than those of the control group ($P < 0.05$), as shown in **Table 1**.

Table 1. Comparison of various perioperative indicators (± s)

Group	Number of cases	Recovery time of gastrointestinal function (h)	Time of defecation (h)	Diet recovery time (h)	Hospitalization time (h)
Observation group	30	31.62 ± 3.56	38.26 ± 3.95	2.95 ± 0.56	9.86 ± 2.13
Control group	30	45.25 ± 4.79	69.46 ± 5.29	5.13 ± 0.79	16.45 ± 3.28
t	-	12.509	25.884	12.331	9.229
P	-	0.000	0.000	0.000	0.000
Group	**Number of cases**	**Defecation time (h)**	**Gastric tube retention time (h)**	**Bowel sounds recovery time (h)**	**Total drainage of gastric tube (ml)**
Observation Group	30	81.23 ± 7.25	82.13 ± 7.55	63.63 ± 6.66	263.13 ± 16.50
Control group	30	88.70 ± 9.43	87.67 ± 7.26	74.90 ± 7.38	314.89 ± 17.68
t	-	2.440	2.897	6.210	11.723
P	-	0.001	0.005	0.000	0.000

3.2. Comparison of nutritional indicators before and after care

Before nursing care, the nutritional indexes of the two groups of patients were compared ($P > 0.05$), and after nursing care, the nutritional indexes of the patients in the observation group were better than those of the control group ($P < 0.05$), as shown in **Table 2**.

Table 2. Comparison of nutritional indicators before and after care (± s)

Group	Number of cases	TP(g/L)		ALB(g/L)		PA(mg/L)	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Observation group	30	62.35 ± 3.65	65.03 ± 3.19	34.16 ± 3.19	36.53 ± 3.49	256.35 ± 27.62	259.68 ± 22.97
Control group	30	62.19 ± 3.79	63.35 ± 2.46	34.09 ± 3.08	35.13 ± 2.28	256.19 ± 27.34	258.65 ± 21.37
t	-	0.167	2.284	0.086	1.839	0.023	0.180
P	-	0.868	0.026	0.931	0.071	0.982	0.858

3.3. Comparison of humoral immunity indexes and cellular immunity indexes before and after nursing care

Before nursing, the humoral immunity indexes and cellular immunity indexes of the two groups of patients were compared ($P > 0.05$), after nursing, the humoral immunity indexes and cellular immunity indexes of the patients in

the observation group were better than those of the control group ($P < 0.05$), as shown in **Table 3**.

Table 3. Comparison of humoral immunity indices as well as cellular immunity indices before and after care (±s)

Group	Number of cases	IgA(g/L)		IgM(g/L)		IgG(g/L)	
		Before treatment	After treatment	Before treatment	After treatment	Before treatment	After treatment
Observation Group	30	2.76 ± 0.80	3.32 ± 0.91	1.69 ± 0.73	1.34 ± 0.98	12.47 ± 3.15	14.23 ± 4.16
Control group	30	2.78 ± 0.78	2.85 ± 0.86	1.67 ± 0.72	1.43 ± 0.76	12.35 ± 3.09	12.98 ± 3.65
t	-	0.098	2.056	0.107	0.397	0.149	1.237
P	-	0.922	0.044	0.915	0.693	0.882	0.221

Group	Number of cases	CD3+(%)		CD4+(%)	
		Before treatment	After treatment	Before Treatment	After treatment
Observation group	30	52.21 ± 8.32	59.59 ± 10.23	39.41 ± 9.26	43.05 ± 7.71
Control group	30	52.16 ± 8.19	53.46 ± 9.28	39.40 ± 9.28	40.93 ± 5.58
t	-	0.023	2.431	0.004	1.220
P	-	0.981	0.018	0.997	0.227

Group	Number of cases	CD8+(%)		CD4+/CD8+	
		Before Treatment	After treatment	Before Treatment	After treatment
Observation group	30	22.45 ± 4.51	16.41 ± 4.49	1.21 ± 0.48	1.92 ± 0.55
Control group	30	22.46 ± 4.61	19.75 ± 5.53	1.22 ± 0.51	1.36 ± 0.42
t	-	0.008	2.568	0.078	4.432
P	-	0.993	0.013	0.938	0.000

3.4. Comparison of gastrointestinal hormone levels before and after nursing

Before nursing, the gastrointestinal hormone levels of the two groups of patients were compared ($P > 0.05$), and after nursing, the gastrointestinal hormone levels of the patients in the observation group were all better than those in the control group ($P < 0.05$), as shown in **Table 4**.

Table 4. Comparison of gastrointestinal hormone levels before and after care (± s)

Group	Number of cases	Gastrin (ng/L)		Serum gastric hunger hormone (ng/L)	
		Before treatment	After treatment	Before treatment	After treatment
Observation group	30	161.56 ± 15.69	208.66 ± 16.27	47.61 ± 5.51	59.66 ± 4.86
Control group	30	160.79 ± 15.76	183.03 ± 16.13	47.03 ± 5.62	54.12 ± 4.72
t	-	0.190	6.127	0.404	4.479
P	-	0.850	0.000	0.688	0.000

3.5. Comparison of postoperative complication rates

The postoperative complication rates of the observation group were lower than those of the control group ($P < 0.05$), based on data from **Table 5**.

Table 5. Comparison of postoperative complication rates [n (%)]

Group	Number of cases	Lung infections	Gastrointestinal dysfunction	Stress injuries	Incision infection	Incidence
Observation group	30	1	1	0	1	3(10.00)
Control group	30	3	4	2	1	10(33.33)
X^2	-	-	-	-	-	4.812
P	-	-	-	-	-	0.028

4. Discussion

Gastric cancer patients often suffer from varying degrees of malnutrition due to impaired digestive function, which in turn affects various physiological functions of the body. Digestive tract reconstruction surgery changes the original anatomical structure through esophago-jejunal anastomosis, and the jejunum partially compensates for the function of the stomach. This structural change results in the incomplete recovery of digestive function in the early postoperative period. During this time, patients experience weakened intestinal peristalsis and reduced absorption capacity, making it difficult to obtain sufficient nutrients through regular diet. Intravenous nutritional support, as an important alternative, can directly provide the energy and nutrients needed by the body. It helps to relieve the burden on the intestines and promotes the recovery of intestinal function. After the patient's intestinal peristalsis function gradually recovers, a gradual transition to a liquid diet can be made. This nutritional support strategy has become a crucial part of the early management after digestive tract reconstruction surgery [7]. Research shows that early postoperative enteral nutritional support has multiple physiological benefits. It can not only maintain the integrity of the intestinal mucosal barrier, prevent mucosal atrophy and bacterial translocation, but also promote the recovery of intestinal peristalsis and absorption function through the direct stimulation of nutrient solutions, thus achieving a balanced intake of nutrients. Clinically, naso-intestinal tubes or naso-gastric tubes are often used as the infusion routes for enteral nutrition. After total gastrectomy, naso-intestinal tubes are mostly used to infuse precisely formulated nutrient solutions into the jejunum. However, initiating enteral nutrition too early may cause digestive discomfort symptoms such as nausea, abdominal distension, and diarrhea, which can affect the daily nutrient intake. Existing studies indicate that adopting an enteral support nursing model and supplementing the insufficient nutrients through the intravenous route before the complete recovery of intestinal function can more effectively promote the early postoperative rehabilitation process of patients.

This study found that all perioperative indicators in the observation group were superior to those in the control group, with a lower incidence of postoperative complications. The likely explanation is that patients undergoing surgery for gastric cancer often experience impaired gastric mucosal and barrier functions, leading to aggravated gastrointestinal symptoms such as nausea and vomiting, which heighten the body's stress response. Implementing a comprehensive intervention plan that combines systematic high-quality nursing with early enteral nutritional support, through nursing measures such as scientific postoperative exercise guidance and professional massage, can effectively promote the recovery of patients' gastrointestinal function. Clinical observations show that this intervention model can not only shorten the length of hospital stay but also significantly improve patients' appetite, ensure the full intake of nutrients, and thus accelerate the rehabilitation process. Relevant studies have confirmed that enteral nutritional support nursing can not only improve the safety of patients after gastric cancer surgery but also significantly optimize the postoperative recovery effect [8].

Additionally, the study revealed that gastrointestinal hormone levels were more favorable in the observation group. A patient-centered enteral nutritional nursing model improves the quality of basic care and deepens professional nursing practice. By systematically implementing various nursing responsibility systems, this intervention model can comprehensively optimize the overall nursing service level. Clinical practice shows that standardized enteral nutritional support can effectively relieve patients' hunger and reduce the body's stress response, thus improving the nutritional and metabolic status. This nutritional intervention method can not only enhance patients' immune function but also regulate the secretion level of gastrointestinal hormones, which has multiple positive effects on promoting patients' recovery.

The study also demonstrated that all nutritional indicators were better in the observation group. Effective early postoperative nutritional interventions should incorporate psychological assessment and support to foster a positive treatment attitude. Since long-term bed rest may induce complications such as pulmonary infections and deep-vein thrombosis, patients and their families need to be guided to regularly adjust the patients' postures and conduct limb functional exercises. In terms of the management of nutrient solution infusion, strict aseptic operation procedures must be followed, and the preparation volume should be controlled according to seasonal characteristics. In summer, the single-preparation volume should be reduced. The use time of the nutrient solution should not exceed 8 hours in spring and summer, and not exceed 24 hours in autumn and winter to prevent the deterioration of the nutrient solution. When implementing enteral nutritional support, a gradual adjustment plan should be adopted, and the patients' intestinal tolerance should be closely monitored. If any discomfort symptoms occur, the infusion speed and dosage should be reduced immediately, and the improvement of the symptoms should be continuously observed. Before the complete transition to total enteral nutrition, parenteral nutritional support is recommended to ensure the continuity of nutrient supply. Meanwhile, the care of naso-intestinal tubes needs to be strengthened. The tubes should be flushed with normal saline 3–4 times a day to keep them unobstructed, so as to optimize the effect of nutritional support.

The study further indicated that humoral and cellular immune parameters were superior in the observation group. Enteral nutritional support nursing exerts a systematic influence on the host immune system through multi-pathway regulatory mechanisms. In terms of immune regulation, this intervention mainly acts on two major systems: humoral immunity and cellular immunity. Specifically, enteral nutrition can effectively maintain the physiological function of the intestinal mucosal barrier, significantly reduce the translocation of intestinal flora and their metabolites into the circulatory system, and thus inhibit the occurrence and development of excessive inflammatory responses. The molecular mechanism of this process involves the direct nutritional support of nutritional substrates to gut-associated lymphoid tissue, especially promoting the production and release of secretory immunoglobulin A, thereby strengthening the function of the mucosal immune barrier. Meanwhile, specific bioactive components in enteral nutrition can precisely regulate the dynamic balance of T-lymphocyte subsets. On the one hand, it stimulates the expression of Th1-type cytokines. On the other hand, it moderately inhibits Th2-type immune responses, forming a coordinated immune-regulatory network. In addition, enteral nutritional support can effectively activate the phagocytic function of neutrophils and macrophages and significantly enhance the killing activity of natural killer cells by providing sufficient proteins and essential micronutrients [9]. More importantly, this nutritional support method has a wide-ranging impact on the neuroendocrine-immune system through the complex regulatory network of the gut-brain-immune axis. In this process, short-chain fatty acids produced by the metabolism of intestinal flora serve as key signaling molecules. They precisely regulate the development and function of regulatory T cells by specifically activating the G-protein-coupled receptor pathway, thereby maintaining the immune balance of the body. By adopting this multi-target and multi-level immune-regulatory mechanism, enteral nutrition establishes its

irreplaceable clinical value in optimizing the immune function of postoperative patients.

5. Conclusion

In conclusion, during the nursing process of elderly patients with gastric cancer, enteral nutritional support nursing can effectively improve the patients' immune capacity and nutritional status, promote their postoperative recovery, and prevent the occurrence of postoperative complications, with good results. However, the number of patients included in this study was relatively small, and the time for including study subjects was short. Therefore, in clinical practice, it is necessary to further increase the number of patients and extend the inclusion time. The impact of enteral nutritional support nursing on the nutritional status of elderly patients with gastric cancer needs to be verified again to further provide data support for formulating postoperative nutritional support plans for elderly patients with gastric cancer [1].

Disclosure statement

The authors declare no conflict of interest.

References

[1] Jang A, Jeong O, 2021, Intolerability to Postoperative Early Oral Nutrition in Older Patients (≥ 70 Years) Undergoing Gastrectomy for Gastric Cancer: A Case-Control Study. Plos One, 16(5): e0251844.

[2] Huang D, Sun Z, Huang J, et al., 2015, Early Enteral Nutrition in Combination With Parenteral Nutrition in Elderly Patients After Surgery Due to Gastrointestinal Cancer. International Journal of Clinical and Experimental Medicine, 8(8): 13937.

[3] Chen X, Zhao G, Zhu L, 2021, Home Enteral Nutrition for Postoperative Elderly Patients With Esophageal Cancer. Annals of Palliative Medicine, 10(1): 27884–27284.

[4] Shao YR, Ke X, Luo LH, et al., 2023, Application of Early Enteral Nutrition Nursing Based on Enhanced Recovery After Surgery Theory in Patients With Digestive Surgery. World Journal of Gastrointestinal Surgery, 15(9): 1910.

[5] Wang Y, Zhou Q, 2021, The Effect of Accelerated Rehabilitation Nursing on Postoperative Recovery, Nutritional Status, and Psychological Status in Patients With Gastric Cancer. American Journal of Translational Research, 13(4): 3666.

[6] Ni H, Sun Y, Meng Y, et al., 2022, Effects of Psychiatric Issues and Early Enteral Nutrition Therapy on Anxiety and Quality-of-Life of Patients With Gastric Cancer. American Journal of Health Behavior, 46(6): 595–599.

[7] Wu CW, Meng HC, Mok KT, et al., 1995, Effect of Total Parenteral Nutrition on the Postoperative Outcome in Aged Patients With Gastric Cancer. Digestive Surgery, 12(3): 164–170.

[8] Chen Z, Hong B, He JJ, et al., 2023, Examining the Impact of Early Enteral Nutritional Support on Postoperative Recovery in Patients Undergoing Surgical Treatment for Gastrointestinal Neoplasms. World Journal of Gastrointestinal Surgery, 15(10): 2222.

[9] Qin Y, Yuan P, Tao L, 2025, Clinical Impact of Early Enteral Nutrition on Postoperative Pain, Gastrointestinal Function and Nutritional Status in Colorectal Cancer Patients. Investigación Clínica, 66(1): 39–48.