15_Nutritional intervention and education is central for nutritional status and compliance of gastric cancer patients undergoing chemotherapy: a randomized trial

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Objectives: Although the incidence and mortality have declined over the past several decades, gastric cancer (GC) is still the fifth commonly diagnosed cancer and the second leading cause of cancer death worldwide, with an global estimated 984,000 newly diagnosed cases and 841,000 cancer deaths worldwide in 2013. There is a geographically variable incidence in GC, with over 70% occurring in developing countries, and 50% occurring in Eastern Asia.

In China, GC ranked second for incidence and third for mortality in 2013. At present, surgery is the standard option and the only potentially curative treatment for GC, however, the high locoregional and distant recurrences rate up to 40% usually results in a poor prognosis. To improve survival rate and reduce the relapse rate, adjuvant chemotherapy after curative resection for gastric cancer is common employed. Several line of evidences showed that combination of surgery and postoperative chemotherapy benefit the survival of GC patients through eliminating the remaining cancer cells and reducing recurrence rate.

Nevertheless, the chemotherapy drugs also considerably damage normal cells and cause numerous chemotherapy-related adverse effects. The chemotherapy-induced damage to normal cells in gastrointestinal mucosal cells cause serious side effects, including nausea, vomiting, diarrhea, constipation, mouth ulcers, which result in severe loss of appetite and significant reduction in dietary intake. Malnutrition is common in upper gastrointestinal cancer patients during and after radio- and/or chemotherapy. Meanwhile, hematologic side effect such as bone marrow suppression also results in anemia; consequently, patients usually have fatigue, dizziness, palpitations, anorexia and even worse, a poor prognosis.

Nutritional interventions such as nutritional counseling or adding nutritional supplements are the standard recommendations by European Society for Clinical Nutrition and Metabolism guidelines for gastrointestinal cancer patients with radiotherapy or/and chemotherapy and have been shown to possess significantly beneficial effects on nutritional status of cancer patients. It has been demonstrated that nutritional counseling during radiotherapy of colorectal cancer patients was effective to reduce radiotherapy-induced side effects and improving nutritional intake/status, as well as in improving long-term prognosis. Yet, the advantages of nutritional intervention on nutritional status of gastric cancer patient with post-operative chemotherapy remained to be further investigated. Educational interventions have also been utilized for helping cancer patients. Even though surgery combined with chemotherapy is the standard treatment for gastric cancer, compliance to postoperative chemotherapy remains a problem. Compliance rates for 4–6 months of combination chemotherapy ranged from 87% to 43%. This is clinically sound since many patients stop treatment due to chemotherapy-induced hematologic and gastrointestinal side effects.

Hence, to solve these problems, this study aimed to investigate the effect of nutritional intervention and education on nutritional status and compliance of gastric cancer patients undergoing postoperative chemotherapy.

Material and Methods: a total of 144 gastric cancer patients were randomized into intervention group which received intensive individualized nutritional and educational interventions during the entire sessions of chemotherapy and a control group which received basic nutrition care and health education during hospitalization. Nutritional status and compliance were compared between two groups to assess the effectiveness of interventions.

Results: The conducted interventions can significantly improve the calorie and iron intake within 24 hours after the first chemotherapy, hemoglobin, total serum proteins and albumin levels during the entire chemotherapy sessions. In addition, the compliance rate of chemotherapy was significantly higher in intervention group than in control group (74% *vs*. 56%, p=0.024).

Conclusion: This study showed that nutritional and educational interventions, played a central role on nutrition status and compliance of gastric patients undergoing postoperative chemotherapy, demonstrating and stressing the need and urgency of integrating nutrition in the global treatment of gastric cancer patients.

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