Impact of enteral nutrition on postoperative immune function and nutritional status

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ABSTRACT. We studied the effects of enteral nutrition (EN) support initiated 1 week before surgery on postoperative nutritional status, immune function, and inflammatory response in gastric cancer patients. A total of 200 gastric cancer patients were randomly divided into two groups: EN starting 1 week before surgery (study group) and EN starting early after surgery (control group). The two groups received EN support, following different therapeutic schedules, until the 9th day after operation. In the patients, body weight, skinfold thickness, upper-arm circumference, white blood cell count, albumin, prealbumin, C-reactive protein, peripheral immunoglobulins (IgA, IgG, and IgM), T lymphocyte subsets, interleukin-6, and tumor necrosis factor-α were measured 10 days before and after surgery and on the first day after surgery. There was no statistically significant difference in the results of recovery time of passage of gas by anus, abdominal distension, stomachache, blood glucose, hepatic and renal functions, and electrolytes between the two groups of patients (P > 0.05). Adverse reactions occurred to both groups at 1 and 2 days after operation. Such conditions was improved after the intravenous drip rate was adjusted.
The albumin and prealbumin levels of the patients in both groups decreased at 1 day after operation (P < 0.05). The levels rose when the research was finished (P < 0.05). The prealbumin level of the study group was higher than that of the control group at 10 days after operation (P < 0.05). The IgG level of the study group was higher than that of the control group at 10 days after operation (P < 0.05). The two groups of inflammatory reaction indicators of the study group were lower than those of the control group at 10 days after operation (P < 0.05). This study indicates that appropriate preoperative EN support for gastric cancer patients can improve their postoperative nutritional status and immune function, can reduce inflammatory response, and is more conducive to the recovery of patients.

**Key words:** Preoperative; Enteral nutrition; Gastric cancer; Immune function