

**Abstract**

**Background:** Body weight loss (BWL) and skeletal muscle loss (SML) are inevitable after gastrectomy for gastric cancer (GC), and can decrease patients' quality of life (QOL) and survival. The aim of this retrospective study was to evaluate the effect of perioperative and post-discharge patient participation in continuous nutritional counseling (CNC) on post-gastrectomy BWL and SML.

**Methods:** Ninety-three patients with GC who underwent curative gastrectomy between March 2018 and July 2019 were analyzed. Patients received either pre-discharge nutritional counseling alone (control group, n=49) or patient-participation CNC (CNC group, n=44) after gastrectomy. Difference between percentage BWL (%BWL), percentage SML (%SML), and nutrition-related blood parameters between the preoperative values and those at 12 months after surgery were compared between the groups.

**Results:** Compared with the control group, %BWL was significantly lower in the CNC group at 1 month ( $-6.2 \pm 2.5\%$  vs.  $-7.9 \pm 3.3\%$ ,  $p=0.005$ ), 6 months ( $-7.8 \pm 6.6\%$  vs.  $-12.3 \pm 6.4\%$ ,  $p=0.001$ ) and 12 months ( $-7.9 \pm 7.6\%$  vs.  $-13.2 \pm 8.2\%$ ,  $p=0.002$ ); and %SML was significantly lower in the CNC group at 12 months ( $-5.3 \pm 10.3\%$  vs.  $-12.8 \pm 12\%$ ,  $p=0.002$ ). Regarding nutrition-related blood parameters, change in total cholesterol was significantly lower in the CNC group than the control group at 12 months after surgery ( $p=0.02$ ). Multivariate analysis identified no CNC as an independent risk factor for severe BWL ( $p=0.001$ ) and SML ( $p=0.006$ ) at 12 months after surgery.

**Conclusions:** Following gastrectomy, patient-participation CNC prevented postoperative BWL and SML after surgery. These results support the induction of such a CNC program in these patients.

**Key words:** Gastric cancer, Gastrectomy, Body weight loss, Skeletal muscle loss, Nutritional counseling