

Effect of Oral Nutrition Supplementation on Quality of Life and Functional Outcomes in Gastrointestinal Cancer Patients Undergoing Chemotherapy: A Randomized Controlled Trial

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ABSTRACT

The purpose of this study was to investigate the efficacy of oral nutrition supplement ONS plus Dietary advice on the Muscle strength hand grip, quality of life (QoL) and related adverse events of gastrointestinal cancer patients undergoing chemotherapy. This study was randomized controlled trial RCT involved gastrointestinal cancer patients undergoing chemotherapy treatment. Malnutrition screening was done for all patients before the start of chemotherapy. Patients were randomized into two groups oral nutrition support group (ONS) (n=75) were given dietary guidance and oral nutrition supplements 500 kcal daily of ONS balanced formula for 12 weeks, while control group Non-ONS (n=75) received only dietary guidance. Basic demographics, Biochemical laboratory tests, Hand grip strength and health-related quality of life questionnaire EORTC QLQ-C30 scores (European Organization for Research and Treatment of Cancer to measure the health-related quality of life) were also collected and analyzed. Hand grip strength routinely measured each cycle every 3 weeks, in addition, the hematological adverse effect was collected according Common Terminology Criteria for adverse Events (CTCAE v5). In comparison to baseline measurements, the results indicated an enhancement in overall quality of life within the ONS group, encompassing the Global QLQ score (adjusted $\beta = 34.20$, SE = 3.80, $p < 0.001$), Symptoms QLQ (adjusted $\beta = 17.8$, SE = 3.00, $p < 0.001$), Functional QLQ (adjusted $\beta = 15.3$, SE = 2.7, $p < 0.001$), and Total QLQ score (adjusted $\beta = 22.4$, SE = 2.6, $p < 0.001$). Non-ONS showed a decrease in hand grip strength, was observed between Time 4 and Time 5 (mean difference = 0.350, $p = 0.009$), and between Time 3 and Time 5 (mean difference = 0.570, $p = 0.033$). In contrast, The ONS group showed maintenance in hand grip strength at all-time points, indicating preserving of muscle strength during follow up period. Early oral nutrition supplements for GIT cancer can significantly improve the nutritional risk profile and quality of life and was associated with preservation handgrip strength and lower incidence of treatment related adverse events predominant in the nutrition support group.

Keywords: Hand grip strength- Quality of life- Oral nutritional supplement- Gastrointestinal cancer- Malnutrition

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