Chemotherapy-Induced Diarrhea Evaluation Table 2023: Omega 3 (Eicosapentaenoic Acid and Others)

General Evidence

Citation	Design/Method Sample/Setting	Variables and Intervention	Outcome Measures	Results/Analysis	Limitations	Quality and Nursing Implications
Miyata, H., Yano, M., Yasuda, T., Yamasaki, M., Murakami, K., Makino, T., . . . Doki, Y. (2017). Randomized study of the clinical effects of ω-3 fatty acid-containing enteral nutrition support during neoadjuvant chemotherapy on chemotherapy-related toxicity in patients with esophageal cancer. *Nutrition, 33*, 204–210. https://doi.org/10.1016/j.nut.2016.07.004	**Design:** Prospective randomized study **Method:** Study participants were randomized into the following 2 groups: omega-3 fatty acids–rich (900 mg daily) group and omega-3 fatty acids–poor (250 mg daily) group during treatment with chemotherapy in the neoadjuvant setting for esophageal cancer. **Sample:** 61 patients (31 in omega-3–rich group, 30 in omega-3–poor group) with esophageal cancer receiving neoadjuvant chemotherapy with docetaxel, cisplatin, and fluorouracil (85% male, 15% female; age range = 56–72 years). **Setting:** Oncology settings in Japan	**Independent Variable:** Omega-3–rich enteral nutrition **Dependent Variables:** Primary endpoint: Incidence of grade 3 or grade 4 neutropenia Secondary endpoints: Chemotherapy-related adverse events (mucositis, stomatitis, diarrhea), renal function, liver function, febrile neutropenia, body weight, serum albumin, tumor necrosis factor, interleukin-6 **Intervention**: Study participants were randomized into 2 groups: omega-3–rich (900 mg daily) and omega-3–poor (250 mg daily). The fatty acids were administered orally or via nasogastric tube.	Common Terminology Criteria for Adverse Events, version 4.0. Diarrhea frequency Routine blood test to evaluate hematologic, renal, liver, and inflammatory marker changes	Grade 3 or 4 diarrhea incidence was less in the omega-3–rich group, but this was not statistically significant (16.1% versus 36.7%, p = 0.068). No statistically significant difference in grade 3 or 4 neutropenia between the 2 groups. No differences between groups in thrombocytopenia (p = 0.186), creatinine levels (p = 0.622), nausea (p = 0.158), or vomiting (p = 0.106). Increases in alanine transaminase (ALT) and aspartate transaminase (AST) were more significant in the omega-3–poor group compared with omega-3–rich group (AST: p = 0.012; ALT: p = 0.015). Grade 3 or 4 stomatitis was significantly less frequent in omega-3–rich group than the omega-3–poor group (p = 0.018).	900 mg daily of enteral omega-3 fatty acids may still be relatively small dose to counter severe chemotherapy-related hematologic toxicities. Linolenic acid (perilla oil and soybean oil) was used instead of eicosapentaenoic acid (EPA) or docosahexaenoic acid (fish oil). Patients participating in the study were mostly male (85%). Small sample size	Findings were valid and reliable. Additional clinical trials are needed to determine the preferred type, amount, and duration of omega-3 fatty acids to reduce chemotherapy-induced toxicities. Chemotherapy toxicities reduce patient quality of life and may lead to the discontinuation of treatment or dose reduction of anticancer drugs, which in turn may attenuate the effectiveness of chemotherapy. Any approach aimed at reducing chemotherapy-induced toxicities is needed to maximize the efficacy of treatment. This study compared the effects of omega-3 fatty acid–rich enteral support with omega-3–poor enteral support on chemotherapy-induced adverse events in patients undergoing cisplatin-based chemotherapy for esophageal cancer. Omega-3–rich enteral support decreased the frequency of chemotherapy-induced mucosal toxicities, such as stomatitis, and exhibited a hepatoprotective effect during chemotherapy, compared to the omega-3–poor group. Reduction in diarrhea was not statistically significant.