SCHOLAR'S INSIGHT
Reaching out to millions

Scholars Insight Publishers

Open Access Journal of Cancer Clinics

Review Article

Open Access

Nutritional Intervention and Quality of Life in Cancer Patients

Verdeja-Robles CA* and Cisneros-Sandoval J.H

Universidad Popular Autónoma del Estado de Puebla, Mexico

Abstract

Introduction: Nutrition in patients with cancer is a controversial issue, although the advantages of having a well-nourished patient such as increased tolerance to chemotherapy treatment, better response, lower infection rate and mortality are no longer discussed. All of the above has a direct impact on the quality of life of these patients.

Objectives: To evaluate the impact of nutritional intervention on the quality of life in oncological patients and to highlight the importance of nutritional intervention in cancer patients.

Methods: The words "Nutritional intervention" "Quality of life" "Cancer patients" were used in Pub-med and Cochrane databases. The 33 articles were analyzed in a second full-text review where all were excluded. The articles that were not clinical trials, did not measure the quality of life, or there was no nutritional intervention. Finally, 14 articles that qualify with the inclusion criteria were included and their results were analyzed.

Results: Regardless of the sample size in the analyzed studies, type of cancer or oncological treatment used, in all the clinical studies there is an increase with statistically significant variation in the scales of assessment of the quality of life in its different versions (EORTC QLQ C30, EORTC QOL, the FACT-G or the SF-36) favoring the groups where nutritional intervention was performed compared to the control groups.

Conclusion: The nutritional intervention in cancer patients is a medical measure that should be used to improve both prognosis and quality of life in patients with cancer. This measure of intervention in the oncological treatment as well as being simple to realize the utility that represents both the medical oncologist and the surgical one greatly surpasses the necessary resources to be performed.

Key words: Nutritional intervention; Quality of life; Nutrition

Corresponding Author: Dr. César A. Verdeja-Robles, Popular Autonomous University of the State of Puebla, Calle 21 Sur 1103, Barrio de Santiago, 72410 Puebla, Puebla, Mexico. Tel: 527442233395, E-mail: cesaralonso.verdeja@upaep.edu.mx

Received Date: Jun 12, 2019;

Accepted Date: Jun 24, 2019;

Published Date: Jul 26, 2019

Publisher: Scholars Insight Online Publishers

Citation: Verdeja-Robles CA, Cisneros-Sandoval J.H. Nutritional Intervention and Quality of Life in Cancer Patients. Open Access J Cancer Clin. 2019; 1:101.

Introduction

Nutrition in the cancer patient continues to be a controversial issue, although the advantages of having a well-nourished patient are no longer discussed, such as the better tolerance of chemotherapy, less toxicity of the same, better response to the therapeutic schemes, lower infection rate and lower mortality [1-4].

The measurement of the quality of life is carried out mainly with the multidimensional questionnaire validated for cancer EORTC-QLQC30 that includes scales of the global state of health of the patient, the quality of life, functional and of symptoms. The global state of health implies that the patient himself judges their state of health and their quality of life. The scale of functionality includes the ability to perform daily activities. Other scales include the ability to perform work, daily activities, hobbies and other activities that the patient enjoys, cognitive, emotional and social capacity. By knowing what these scales include, we can highlight the importance they have for both the doctor and the patient [5].

Weight loss can be attributed to the physiological abnormalities related to the tumor (malabsorption, obstruction, diarrhea, vomiting, etc.), to the response of the host against the tumor (anorexia and altered metabolism), and especially to the side effects of cancer therapy The reduction of weight by itself is a constant reminder of disease, which affects the quality of life of the patient [6].

The syndrome of progressive weight loss, asthenia and cachexia in the cancer patient are responsible for up to 20% of deaths. Cachexia appears as a final result of the reduction in the absorption of nutrients, alterations in appetite, taste or intake, hormonal metabolic changes and the activation of the immune system related to cancer with cytokine releases [7-8].

Regardless of the underlying mechanisms, the weight loss related to cancer is multidimensional, however, everything culminates in the decrease of the patient's well-being. Weight loss specifically decreases the immune response against tumor cells and the ability to withstand infection, further increases susceptibility to future complications, disability and increases the cost of patient care [9-10].

In addition to the fact that nutritional deterioration affects 8-84% of patients with cancer, this has been associated with disability to perform activities, morbidity and in general with the quality of life of the patient, however the latter is almost not taken into account [eleven]. Currently the quality of life in cancer patients begins to take on great importance because the survival of oncological patients has lengthened; therefore the need arises to meet the needs and expectations of the day to day

in the life of the patients. Patients now it is a reality that the patient may prefer to change months of survival if these are related to a better quality of life [9-11].

Quality of life

Health is defined as the state of complete physical, mental and social well-being, not just the absence of disease [12]. Health related to quality of life is a multidimensional concept which will quantify the physiological, physical and social effects of both the disease itself and the treatment. For its quantification, questionnaires answered by the patient are normally used. In cancer patients it has been seen that the state of health is reflected in the analysis of quality of life [13].

Quality of life is of special importance for cancer patients. The nutritional status has an important effect on the quality of life and the feeling of well-being of the patient with cancer. Patients who mention having difficulty eating due to the side effects of treatment or the disease itself can avoid social interactions with family and friends, resulting in even greater depression and loss of appetite [6].

A wide range of generic questionnaires or "specific disease" quality of life has been developed. Some more validated than others, such as the EORTC QLQ-C30, the FACT-G or the SF-36, which are frequently used as reliable tools to assess the quality of life in oncological patients. These simply vary according to the focus, be it physical ability, symptoms, etc. The two methods of assessing the quality of life most used in cancer are the EORTC QOL and the instrument for functional evaluation of cancer treatment (FACT for its acronym in English) [14].

Clinical importance

A good question is, how to interpret the results of the study of quality of life?. A statistical finding suggests that the information is not observed due to probability fluctuations, this means that the variations in the P do not have a direct relationship with the importance or clinical significance. However, it is suggested that a change of 10 points on a scale of 0-100 points for a particular item shows a significance or clinical significance [15-17].

Nutritional intervention in cancer patients

Nutritional support in cancer patients is a process that is developed in stages, which include the management and individualization of each patient according to their nutritional conditions, clinical status, oncological treatment planning and the expected outcome. The main goal of joint development of oncological therapy and nutritional intervention is to improve the quality of life of the patient during and after treatment. On the other hand, it helps to support the oncological treatment by preserving the functional status and quality of life [18-19].

Objetives

- To evaluate the impact of the nutritional intervention on the quality of life in oncological patients.
- Highlight the importance of nutritional intervention in oncological patients.

Methods

Eligibility criteria

- Clinical trial.
- Nutritional intervention.
- Measurement of quality of life (EORTC QLQ-C30, EORTC QOL, FACT-G or SF-36).

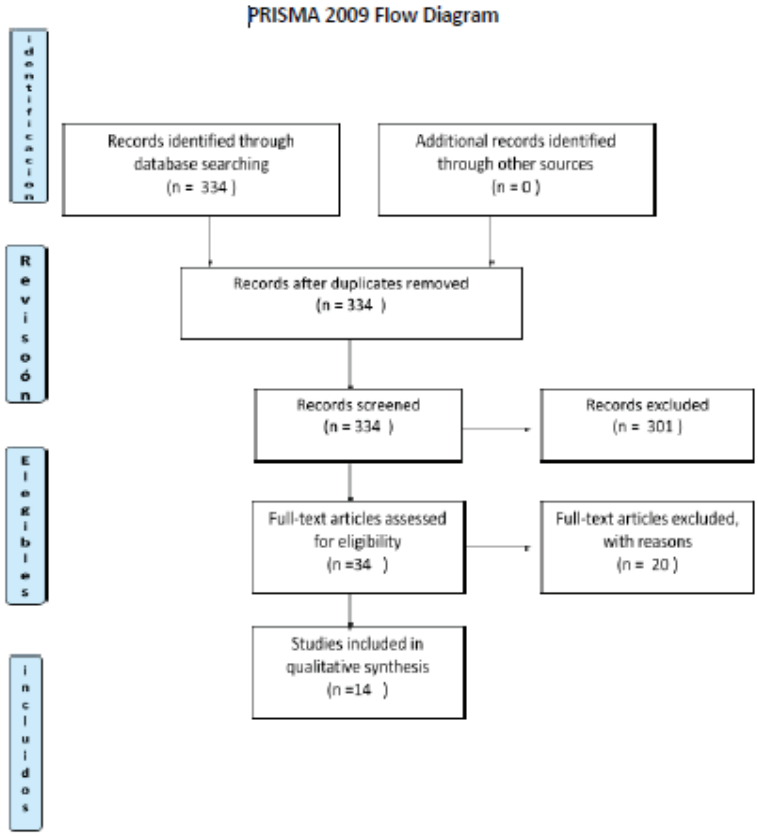

Figure 1:

Table 1: Resultados.

Study	Nutritional Intervention	Cancer treatment	Patients	Results
Ravasco et al. 2005, Clinical trial [20]	Yes	RT	65 patients / with head and neck cancer treated with radiotherapy	The groups with nutritional intervention in spite of the symptoms induced by RT, all scores of the QOL function improved significantly (p <.003), and these were proportional to the increases recorded in energy and protein intakes (r <.83 ; p <.001).
Ravasco et al. 2006, Clinical trial [21]	Yes	RT/QT/ Surgery	Two prospective randomized controlled trials were performed in patients with colon / rectal cancer (n = 111) or head / neck cancer (n = 75), in both cases the patients were stratified for their stage.	Colorectal cancer (G1) (intervention): Significantly improved all QoL function scores. (G2) (supplementation), only 3 of the 6 function scores improved during supplementation, in proportion to the increase in intake. (G3) (control) experienced throughout the treatment, a significant deterioration in the score of function and fatigue in direct relation to the worsening of their intake and nutritional status. Head and neck cancer (G1) (intervention) significantly improved all QoL functional scores. G2 (supplements), patients who received oral supplements, improved functional scores during the intervention period. G3 (control) experienced throughout the study period a significant deterioration in the score of the function and fatigue, in direct relation to the worsening of their intake and nutritional status.
Ravasco et al. 2007, Clinical trial [22]	Yes	RT	271 patients with head and neck cancer, esophagus, stomach and colon / rectum.	In this clinical trial, dietary advice (G1) (intervention) significantly improved all scores of the QoL function. G2 (intervention) patients who received oral supplements, functional scores improved during the intervention period, to a lesser extent than G1. G3 (control) patients who did not receive nutritional intervention throughout the study period experienced deterioration in functional scores and fatigue directly related to the worsening of their intake and nutritional status.
Ruefenacht U. et al. Clinical trial [23]	Yes	NA	Malnourished outpatients with cancer were Randomized in two groups. One group (NT, n = 30) was advised individually by a professional dietitian for 3 months, while the other group (UC, n = 28) received the usual oncological care without specific nutritional intervention.	The intervention group had a significantly higher energy intake of protein than the CU group (+379 kcal, 95% CI: 117 642, p = 0.007, + 10.4 g of protein, 95% CI: 2.3 18.5, p = 0.02). QoL: there were significant improvements in global health status between both groups (p <0.05)
Hyang M. et al. Clinical trial [24]	Yes	RT	87 patients with cancer were randomized, 44 in a control group and 43 in a group with nutritional counseling	The QoL (quality of life) scale in the intervention group showed improvement in general. In the scales of function and social role significantly improved along with the scales of insomnia and pain, on the contrary the control group showed a deterioration in all the scales measured.
Isenring E. et al. 2004, Clinical trial [25]	Yes	RT	60 randomized patients, 29 received nutritional intervention and 31 usual care.	The intervention group showed a lower deterioration in weight (P: 0.001), nutritional status (P: 0.020) and in the global QoL quality of life scale (P: 0.009), compared with the control group. There was also a difference of 10 or more points in the scales between groups.
Kapoor N. Et al. 2016, Clinical trial [26]	Yes	RT/QT/ Surgery	123 adult women with cancer in advanced stages	Patients in the intervention group showed statistically significant improvement (P <0.05) in all measured areas of QoL with the exception of pain.
Kiss N. et al. Clinical trial [27]	Yes	RT	24 patients divided into groups of 12 patients each.	The patients in the intervention group maintained the overall quality of life status during the radiotherapy treatment, compared to the progressive deterioration in the control group (6.8, 95% CI) at the end of the treatment.

Uster A. et al. Clinical trial [28]	Yes	NA	447 patients with metastatic lung cancer and gastrointestinal tract were screened for inclusion. Therefore, 286 the patients did not meet the inclusion criteria and 101 patients He refused to participate. A total of 58 patients were assigned to the intervention (n = 29) or to the control group (n = 29)	QoL did not show statistical significance Difference with the value of P but with a> 10 points of difference between the groups in the evaluation of QoL. In addition, patients in the control group experienced significantly more nausea and vomiting on the EORTC-QLQ-C30 subscale (p = 0.023). Other functional or symptomatic scales do not differ significantly between groups.
Meij BS. et al. Clinical trial [29]	Yes	RT/QT/ Surgery	42 patients with NSCLC in stage IIIa-N2 or histological or cytological IIIb tested. Patients 18 to 80 years of age were included if they were eligible for multimodal treatment, and if their life expectancy was 43 months.	Patients in group I presented, in general, better quality of life scores than patients in the control group. After 3 weeks, the intervention group had a higher Karnofsky performance status (B.5.3, P.0.04) than the control group. After 5 weeks, Karnofsky's performance status did not differ between the groups. After 5 weeks, the intervention group showed a significantly better overall health status (B.12.2, P.0.04), physical function (B.11.6, Po0.01), cognitive function (B.20.7, Po0.01) and social function (B.22.1, P.0.04) in the EORTC-QLQC30 subscales that the control group.
Faber J, et al. Clinical trial [30]	Yes	NA	64 patients recently diagnosed with esophageal cancer.	The functional status of the COG improved after the intervention with the specific medical food (P <0.05). In addition, serum levels of prostaglandin E2 (PGE2) were significantly reduced in the group of specific medical foods and increased in the control group (P = 0.002).
Trabal J. et al. Clinical trial [31]	Yes	QT	13 patients with cancer of: sigmoid colon 6 (46.2%) patients, rectum 5 (38.5%) patients and transverse colon 2 (15.4%) patients	Among the different domains of HRQOL, we did not find significant differences in the GHS / QoL scale between the treatment and control groups (3.33 vs. 6.94, p = ns). Although both groups decreased their physical function (-4 vs -15.56: p = ns), only the control group had a worsening of more than 10 points, considered clinically significant. For the function function, the supplemented group experienced an improvement in this domain (13.33 vs. 2.78, p = ns). The scale of social function was positively affected by the experimental intervention, with statistically significant differences between the groups (16.67 versus -13.89, p = 0.038). Changes of more than 10 points were also found in some symptoms, with the control group experiencing more fatigue (-4.44 vs. 11.11, p = ns) and pain (-10 vs. 2.78, p = ns). Unexpectedly, the loss of appetite worsened in the supplemented group (6.67 vs -16.67, p = ns).
Vergara N [32]. Clinical trial	Yes	QT	Ninety-seven (97) cancer patients treated consecutively in the chemotherapy unit and chemotherapy rooms were included in the study	A total of 97 subjects were included in this study, 66 subjects (68.04%) were women and 31 (31.96%) were men. The average age was 54.55 ± 11.14 years, while the average performance status according to the Eastern Cooperative Oncology Group classification was 0.88 ± 0.83 with a range of 0-3. According to the Subjective Global Assessment, there were 58 patients with SGA A, classified to have adequate nutrition, and 39 patients (40.21%) were considered malnourished. Among these 39 patients, 32 were classified as SGA-B (moderately malnourished) and 7 were classified as SGA C (severely malnourished), the overall quality of life was 68.73 ± 19.05. The results of the ANOVA test revealed that the patients were statistically different in the global subjective evaluation groups according to overall quality of life (p <0.001), physical (p <0.001), role (p <0.001), emotional (p < 0.001) and cognitive functioning (p <0.001); fatigue (p <0.001), nausea and vomiting (p <0.001), pain (p <0.001), insomnia (p <0.001) and loss of appetite (p <0.001)
Silvers M. A. 2014, Ensayo Clinico [33], Clinical trial	SI	Surgery/QT	21 patients with a histopathological diagnosis of stomach or esophagus cancer older than 18 years	The intervention group (n = 10) had a higher overall quality of life score compared to the control group (n = 11) regardless of whether this was measured using the EQ-5D (p = 0.003), the EQ-5D VAS (p = 0.003) or the global health scale EORTC (p <0.001). The intervention group scored higher in the EORTC QoL function than the control group. The PG-SGA scale was lower in the intervention group than the control group by 6 points on average.

Sources of information

Pub-med y Cochrane

Search

The words "Nutritional intervention ""Quality of life ""Cancer patients "were used in the two online search bases. In the Cochrane database, 122 articles were found and in the Pub-med database 214 were found to give a total of 334 titles, of which 301 were eliminated because they did not comply with all the search terms. review articles, were not in full text, or did not match the subject of the review. Subsequently, the 33 articles were analyzed in a second full-text review where all articles that were not clinical trials were excluded, did not measure the quality of life, or there was no nutritional intervention. Finally, 13 articles were included that qualify with the inclusion criteria and their results were analyzed.

Results

QT: Chemotherapy RT: radiotherapy NA: Does not apply

Discussion

Oncological treatment is usually intensive and promotes the development of malnutrition, functional and emotional deterioration, and the quality of life of patients. The ideal nutritional intervention begins with a nutritional evaluation of the patient, then based on the results of this measurement of the nutritional status of the patient, nutritional counseling, oral supplementation, enteral or parenteral nutrition is carried out. Follow-ups should be carried out with regular nutrition evaluations [34].

Regardless of the sample size in the analyzed studies, type of cancer or oncological treatment used, in all clinical studies there is an increase with statistically significant variation in the scales of assessment of the quality of life in its different versions (EORTC QLQ-C30, EORTC QOL, FACT-G or SF-36) favoring the groups where nutritional intervention was carried out compared to the control groups (Figure 1 and Table 1). The clinically relevant results are those in which the overall quality of life as well as the physical and social function increase, since they are key determinants for adherence to treatment as well as the reduction of adverse effects to oncological treatments.

Limitations

The number of studies carried out that have the necessary characteristics to be evaluated with a good level of evidence is limited and in this meta-analysis only 14 are included.

Conclusion

The nutritional intervention in cancer patients is a medical measure that should be used to improve both the prognosis and the quality of life in patients with cancer. This measure of intervention in the oncological treatment as well as being simple to realize the utility that represents both the medical oncologist and the surgical one greatly surpasses the necessary resources to be performed. Currently, the focus on the quality of life in cancer patients is a central pillar in the treatment and follow-up of patients. In such a way that it should be used as a co adjuvant treatment in any oncological patient under treatment based on chemotherapy, radiotherapy and / or surgical intervention.

100% of the analyzed articles show a significant improvement for the patient in the quality of life (according to the questionnaire evaluated) in this way corroborating the efficacy and importance of the nutritional intervention as part of the integral management of the oncological patient in the present.

Acknowledgment

I thank the Popular Autonomous University of the State of Puebla for helping in my educational training and research skills, also Dr. Laura Contreras Mioni and Dr. Elvira Carillo for their support and teaching.

References

1. Van Cutsem E, Arends J. The causes and consequences of cancer-associated malnutrition. Eur J Oncol Nurs. 2005; 9: S51-S63.
2. Isenring E, Bauer J, Capra S. The scored Patient-generated Subjective Global Assessment (PG-SGA) and its association with quality of life in ambulatory patients receiving radiotherapy. Eur J Clin Nutr. 2003; 57: 305-309.
3. Tong H, Isenring E, Yates P. The prevalence of nutrition impact symptoms and their relationship to quality of life and clinical outcomes in medical oncology patients. Support Care Cancer. 2009; 17: 83-90.
4. Bauer J, Capra S, Ferguson M. Use of the scored Patient-Generated Subjective Global Assessment (PG-SGA) as a nutrition assessment tool in patients with cancer. Eur J Clin Nutr. 2002; 56: 779-785.
5. Aaronson NK, Ahmedzai S, Bergman B, Bullinger M, Cull A, Duez NJ et al. The European Organization for Research and Treatment of Cancer QLQ-C30: a qualityof- life instrument for use in international clinical trials in oncology. J Natl Cancer Inst. 1993; 85: 365-376.
6. Huhmann B, Cunningham R. Importance of nutritional screening in treatment of cáncer-related weight loss. Lancet Oncol 2005; 6: 334-343.
7. Cravo ML, Glória ML, Claro I. Metabolic responses to tumour disease and progression: tumour-host interaction. Clin Nutr. 2000; 19: 459-65.
8. Ravasco P, Camilo M. Patient-Centered Outcomes in Cancer: Nutrition Makes a Real Difference!. Current Nutrition & Food Science. 2006; 2: 193-203
9. Ravasco P, Monteiro Grillo I, Marques Vidal P, Camilo ME. Nutritional deterioration in cancer: the role of disease and diet. Clin Oncol. 2003; 15: 443-450.
10. Ravasco P, Monteiro-Grillo I, Camilo M. Does nutrition influence quality of life in cancer patients undergoing radiotherapy? Radiother Oncol. 2003; 67: 213-220.
11. Ravasco P, Monteiro Grillo I, Marques Vidal P, Camilo ME. Cancer: disease and nutrition are key determinants of patients' Quality of Life. Support Care Cancer. 2004; 12: 246-252.
12. World Health Organization. Preamble to the constitution of the World Health Organization as adopted by the international health conference, by the representatives of 61 States (Official Records of the World Health Organization) 1946; New York: 1948; 1946: 100.
13. Kuenstner S, Langelotz C, Budach V, Possinger K, Krause B, Sezer O. The comparability of quality of life scores a multitrait multimethod analysis of the EORTC QLQ-C30, SF-36 and FLIC questionnaires. Eur J Cancer. 2002; 38: 339-348.
14. Movsas B. Quality of life in oncology trials: a clinical guide. Semin Radiat Oncol. 2003; 13: 235-247.
15. Feinstein A: Clinical biostatistics, XL: Stochastic significance, consistency, apposite data, and some other reme dies for the intellectual pollutants of statistical vocabulary. Clin Pharmacol Ther. 1977; 22: 113-123.
16. Salsburg D. Hypothesis versus significance testing for controlled clinical trials: A dialogue. Stat Med 1990; 9: 201-211.
17. Movsas B. Quality of Life in Oncology Trials: A Clinical Guide Seminars in Radiation Oncology. 2003; 13: 235-247.

18. Bozzetti F, Arends J, Lundholm K, et al. ESPEN guidelines on parenteral nutrition: non-surgical oncology. Clin Nutr. 2009; 28: 445-454.

19. Paccagnella A, Morassutti I, Rosti G. Nutritional intervention for improving treatment tolerance in cancer patients. Curr Opin Oncol. 2011; 23: 322-330.

20. BS van der Meij, Langius JAE, Spreeuwenberg MD, Slootmaker SM, Paul MA, EF Smit EF, et al. Oral nutritional supplements containing n-3 polyunsaturated fatty acids affect quality of life and functional status in lung cáncer patients during multimodality treatment: an RCT. Eur J Clin Nutr. 2012; 66: 399-404.

21. Paula Ravasco, Maria Camilo. Patient-Centered Outcomes in Cancer: Nutrition Makes a Real Difference!. Current Nutr Food Sci. 2006; 2: 193-203

22. Paula Ravascoa, Isabel Monteiro Grilloa, Maria Camiloa. Cancer wasting and quality of life react to early individualized nutritional counselling!. Clin Nutr 2007; 26: 7-15.

23. Ruefenacht U, Ruehlin M, Pless M, Dieterle S, Imoberdorf R, Ballmer PE. Department of Medicine, Kantonsspital Winterthur, Winterthur, Switzerland.

24. Intensive nutritional counseling improves PG-SGA scores and nutritional symptoms during and after radiotherapy in Korean cancer patients. Mi Hyang Um & Mi Youn Choi & Song Mi Lee & Ik Jae Lee & Chang Geol Lee & Yoo Kyoung Park. Support Care Cancer.

25. Isenring EA, Capra S, Bauer JD. Nutrition intervention is beneficial in oncology outpatients receiving radiotherapy to the gastrointestinal or head and neck area.

26. Jane N, Sundus T, Sushma B, Garg R, Ihab T. A Prospective Randomized Controlled Trial to Study the Impact of a Nutrition-Sensitive Intervention on Adult Women With Cancer Cachexia Undergoing Palliative Care in India Neha Kapoor, MSc.Integrative Cancer Therapies April-June 2016: 1-11.

27. Kiss N, Isenring E, Gough K, Wheeler G, Wirth A, Belinda A. Campbell & Meinir Krishnasamy Early and Intensive Dietary Counseling in Lung Cancer Patients Receiving (Chemo) Radiotherapy-A Pilot Randomized Controlled Trial.

28. Uster A, Rühlin M, Mey S, Gisi D, Knols R, Imoberdorf R, et al. Effect of nutrition and physical exercise intervention on quality of life and treatment related complications in advanced cancer patients: a randomised controlled trial.

29. BS van der Meij, Langius JAE, Spreeuwenberg MD, Slootmaker SM, Paul MA, EF Smit, et al. Oral nutritional supplements containing n-3 polyunsaturated fatty acids affect quality of life and functional status in lung cancer patients during multimodality treatment: an RCT. European Journal of Clinical Nutrition. 2012; 66: 399-404.

30. Faber J, Uitdehaag MJ, Spaander M, van Steenbergen-Langeveld S, Vos P, Berkhout M, et al. Improved body weight and performance status and reduced serum PGE2 levels after nutritional intervention with a specific medical food in newly diagnosed patients with esophageal cancer or adenocarcinoma of the gastro-esophageal junction. J Cachexia Sarcopenia Muscle. 2015; 6: 32-44.

31. Trabal J, Leyes P, Forga M, Maurel J. Potential usefulness of an EPA-enriched nutritional supplement on chemotherapy tolerability in cancer patients without overt malnutrition. Nutr Hosp. 2010; 25: 736-740.

32. Vergara N, Montoya JE, Luna HG, Amparo JR, Cristal-Luna G. Quality of life and nutritional status among cancer patients on chemotherapy.Oman Med J. 2013; 28: 270-274.

33. Silvers MA, Savva J, Huggins CE, Truby H, Haines T. Potential benefits of early nutritional intervention in adults with upper gastrointestinal cancer: a pilot randomised trial. Support Care Cancer. Springer-Verlag Berlin Heidelberg 2014.

34. Stratton RJ. Summary of a systematic review on oral nutritional supplement use in the community. Proc Nutr Soc. 2000; 59: 469-476.