



Research Article

Role of nutritional rehabilitation in treatment of cancer related fatigue- A prospective and observational study

Authors

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Abstract

Aim: 1) To reduce the occurrence of CANCER RELATED FATIGUE (CRF) in cancer patients, by correcting their nutritional intake. 2) To reduce the dependency over NSAIDs for myalgia relief.

Materials & Methods: Initially patients were assessed for prevalence of CRF, with FATIGUE SEVERITY ASSESSMENT (FSS) QUESTIONNAIRE. FSS scoring >4 were chosen for study. Total sample size was 363. For 167 patients, their nutrition was specially designed with dietitian's consultation & with reference to ESPEN cancer nutrition requirement protocols. Daily requirements were almost given to the maximum possible extent. They were strictly monitored to follow that diet chart. Balance 196 patients were allowed in their routine diet. At the end of their chemo and RT, (7-8 WEEKS after their initial assessment roughly) all the patients (363) were once again assessed with FSS questionnaire. Both the old and new FSS scoring were compared and analyzed for fatigue relief and subjective well being.

Results: We found cancer related fatigue reduced in severity in 74% of patients in nutrition designed wing. Only 8% of patients showed reduced fatigue when their nutrition was unscheduled.

Conclusion: Correctly programmed nutritional support to patients with cancer, reduces the occurrence of CRF to a significant extent.

Keywords: Cancer related fatigue, nutritional assessment

Introduction

By definition, cancer related fatigue means persistent subjective sense of tiredness during cancer & cancer treatment that interferes with usual functioning. Patient feels extreme tiredness and myalgia. He loses his interest in proceeding with his regular activities. Especially he is not co-operating to complete the treatment protocol. This is one of the strongest reasons by which the number of defaulters in cancer treatment gets increased.

Fatigue Incidence

The incidence at the time of diagnosis of cancer is around 40-50%, during radiotherapy it goes upto 70-80%, and in chemo therapy it is 80-90%. It is important to note, 1/3 of patients have persistent fatigue for years together even after the completion of treatment. ESPEN (EUROPEAN SOCIETY FOR CLINICAL NUTRITION) says, 20% of cancer death occurs due to malnutrition, rather than the malignancy itself; >30% of weight loss is not compatible with life.

Fatigue Incidence in Our Institution

After obtaining the approval of Institutional Ethical committee from RAJIV GANDHI GOVERNMENT GENERAL HOSPITAL, CHENNAI, we conducted a survey in outpatient registration room, to find the diet schedule of cancer patients (100 patients).we found, only 27% of patient have regular feeds,25% patients quit one meal per day, 17% patients quit additional one more meal, i.e. they stay with only one meal per day, 31% just go with liquid food alone & 22% of patients express they stay in starvation for >14-15 hrs per day even without recognizing the importance of their nutrition. The reasons behind such malnutrition could be mechanical difficulties in swallowing due to tumor infiltrations, financial crisis, lack of family support, psychological shock of hearing the diagnosis as cancer and unexplained inflammations in body due to cytokines release.

Goals of the Study

The main aim of our study is to

1. To assess the prevalence of cancer related fatigue in our institution,
2. To rehabilitate the cancer patients in their nutritional aspect,
3. To find whether there is any reduction in their fatigue scale.

Our Study

The study period was January 2018 to April 2018, toally 500 patients were interviewed patients with HEAD & NECK for cancer related fatigue prevalence by BRIEF INVENTORY QUESTIONNAIRE, (MD ANDERSON CANCER CENTRE,) & 363 found to have cancer related fatigue(i.e. 72.6%) score of more than 4 out of 9 is considered significant.

Among these 363 patients, we excluded patients with advanced stage (stage 4), age more than 65, & patients with co morbid conditions like diabetes, hypertension, coronary heart diseases, etc. Among these 311 early stage HEAD & NECK patients, we asked for the consent of the attenders

and the patient to participate in this study, 144 attenders was not interested and they wanted to continue with their own diet habits .But they gave their consent to use them as CONTROLS in this study. After excluding these people our sample size became 167. We prepared separate diet charts for those with Ryles tube feeding and those with regular oral feeds. Our aim of the diet chart was to meet the recommendations of ESPEN (EUROPEAN SOCIETY FOR PARENTAL NUTRITION) total protein 1.5 gm/kg / day & total calorie 20-30 kcal/kg/day. The diet included in that chart is affordable, easily available around our institution, easily digestible & ethnically acceptable.

All the patients and the attenders were given detailed lectures about the importance of the diet chart. They were instructed to adhere the diet chart strictly 100%. Strict monitoring was done by ward post graduates and attender- volunteers committee persons. Patients were assessed weekly (sometimes bi- weekly) blood investigations to find Total count , differential count, hemoglobin level, serum protein level especially albumin and serum electrolytes level. Any disparity in these readings was immediately attended. Whenever required blood transfusions were given. Inj. Erythropoietin also was used. Serum albumin level with <4 gm/dl, were given inj.Albumin. Inj. Astymin forte also given on alternative days. Many patients were given TOTAL PARENTAL NUTRITION whenever required. All the patients were given multivitamin infusions weekly or biweekly.

Fatigue Monitoring

Patients were monitored strictly for their perseverance of diet protocol. But we found only few were able to complete the daily diet targets. Majority of them were not able to complete it due to various reasons. Our diet chart contained totally 7 serves in divided timings starting from 5.00AM to 8.00PM, which has 3 major serves (2, 4, &7) and 4 minor serves. Cancer related fatigue assessment was done periodically before commencement of treatment, on 10th day of

treatment, 20th day and at the completion of treatment. Their initial score was used to compare with their later FSS scores.

Results

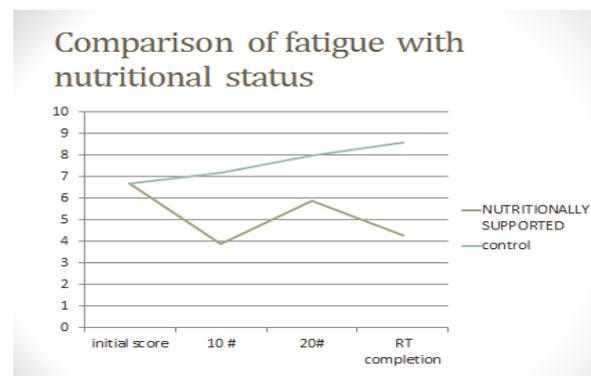
We had 167 patients in nutritionally supported group, their initial BFI scoring was 6.7 (the arithmetic mean of nine entities of BFI); at 10th day their average scoring was 3.9- which is considered as mild, on 20th day their average score was 5.9 and at the end it was 4.3. There is gradual reduction in severity assessment scale of fatigue when patient takes adequate nutrition.

In controls, the initial assessment score in BFI was 6.7, at 10th day it was 7.2, on 20th day BFI average score was 8.0 and at treatment completion it was 8.6, which was very severe to tolerate. It is also important to note the number of treatment defaulters in nutritionally supported group was negligible (33/167) i.e. 19%, but in nutritionally unstructured unsupported group the number of treatment defaulters is much increased (69/144) i.e. 48%

We found cancer related fatigue reduced in severity in 74% of patients in nutrition designed wing. Only 8% of patients showed reduced fatigue when their nutrition was unscheduled

Diet chart for patients on oral intake

Time	Food	protein	fat	calorie
5.00 A M	EGG (1)+ MILK (100ML)	13.3 g+ 3.2 g	11 g	155 kcal 67 Kcal
8.00 AM	JOWAR/ BAJRA PORRIDGE (200 ML)	23.2 g	1.0	361 kcal
11.00 AM	BANANA / GRAPE JUICE /VEG SOUP	1.1 g	0.3 g	89 kcal
12.30 PM	RICE + SAMBAR+vada(2)	15.4 g	4.8 g	258.5 kcal+ 140 kcal
4.00 PM	TENDER COCONUT/	0	0	5.45 kcal
5.30 PM	EGG (1) + MILK (100 ML)	11 g+ 3.2 g	13.3	155 kcal 67 kcal
8.00 PM	IDLIES (4)+sambar	13.6 g	9.0	312 kcal+
	TOTAL	73 g	39 g	1610 kcal



Conclusion

Adequate nutritional support decreases the incidence of fatigue during Radiotherapy .It also reduces the occurrence of breaks in the course of Radiotherapy treatment. Adequate nutritional support is mandatory for cancer patients to complete the treatment without gap.

References

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Daily requirements for a cancer patient

no	nutrient	RECOMMENDATION
1	Protein	60-65 grams
2	Fat	70 grams
3	Saturated fatty acid	24 -30 grams
4	Carbohydrates	310 – 400 grams
5	calories	1400-1500 kcals

Diet chart for patients on Ryles tube

Time	Food	protein	fat	calorie
5.00 A M	EGG (1)+ MILK (100ML)	13.3 g+ 3.2 g	11 g	155 Kcal 67 Kcal
8.00 AM	RICE PORRIDGE (200 ML)	6.8 g	2.6 g	280 kcal
11.00 AM	BANANA / GRAPE JUICE /VEG SOUP	1.1 g	0.3 g	89 kcal
12.30 PM	JOWAR/ BAJRA PORRIDGE (200 ML)	23.2 g		361 kcal
4.00 PM	TENDER COCONUT/ CURD (100 ML)	0/11 g	0/4.3 g	5.45/98 kcal
5.30 PM	EGG (1) + MILK (100 ML)	13.3 g+ 3.2 g	11	155 Kcal 67 kcal
8.00 PM	RICE PORRIDGE (200 ML)	6.8 g	2.6 g	280 kcal
	TOTAL	67.8 G	31.8 G	1552 Kcal

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