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THE IMPACT OF GRAVIOLA ON THE QUALITY OF LIFE OF PATIENTS WITH CANCER

Nursing

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ABSTRACT

Background: Cancer is one of the leading causes of mortality & morbidity worldwide. Cancer patients experience symptoms including pain, fatigue and various mental distresses. Scientists have proven the cancer healing abilities of Graviola in patients with breast, liver, pancreatic cancer. Investigator has witnessed the dramatic effect of Graviola on liver cancer patient at USA and recommended the same to the patients in India. Hence the investigator decided to conduct the study in phase I and Phase II.

Objectives: The aim of the study was to determine the impact of Graviola on QOL of cancer patients and to correlate the use of the Graviola with disease & selected background factors.

Methods: Design used was Ex post facto Quasi Experimental. Baseline data from 164 patients with cancer and who were consuming Graviola were analyzed using Standardized tool for QOL – EORTC-QOL-C#) and Opinionnaire on Graviola. Data was collected by telephonic interview survey technique after obtaining oral consent.

Result: Majority of the sample belonged to the age group of 46-60 years. 56.7% of the sample did not have trouble in doing strenuous activities. Only 3% had trouble in taking a long walks whereas 62% of the sample did not require any help with ADL. 62% of the sample showed significant reduction in pain. 90% sample stated that their sleep quality had been improved, 80% of the sample vocalized that all gastro intestinal problems such as lack of appetite, nausea, vomiting, diarrhoea were reduced. 58% sample stated there were significant reduction in feeling of anxiety, worry, and tiredness.

Conclusion: The use of Graviola has significant effect in improving QOL. However further extensive researches are required to elicit the endpoint benefits of Graviola which can be a boon for cancer patients.

KEYWORDS

Graviola, Cancer patients, Quality of life, ADL, Impact

If you watch how nature deals with adversity, continually renewing itself, You can't help but learn.

- Bernie Seigel

Introduction:

Cancer is one of the leading causes of mortality and morbidity worldwide. The incidence of cancer has increased worldwide during the recent decades. The estimated incidence of cancer in the country rose from 10,86,783 in 2013 to 11,17,269 in 2014.The maximum number of cases have been recorded in Uttar Pradesh in India. The estimated cancer mortality was 4,91,591 in 2014. Every year 8,00,000 new cases are reported with National Cancer Registry program. This shows that cancer is one of the major health problems in India. Lung and Oral Cancers are most common among men while cervical and breast cancers in women. Patients with cancer experience signs and symptoms including pain, fatigue and various mental distresses. Cancer can produce many different symptoms, some subtle and some not so subtle. The cost of cancer care has increased substantially. However there have been only limited attempts to control these costs by implementing primary prevention programs. An increasingly important issue in Oncology Nursing is to evaluate quality of life of cancer patients.[1]

Quality of life of patients with cancer diminish due to side effects of treatment and symptoms of disease. Cancer is not just an event but a continuous cascade of consequences.[2]

Several studies have addressed quality of life issues in cancer survivors. Among young adult's survivors of childhood cancer, Langeveld et al. reported that many survivors, except those with bone tumors, reported being in good health and that most were functioning well psychologically. Factors associated with serious psychological distress in long-term survivors of adult-onset cancer include age younger than 65 years, being unmarried or not living with a partner, having less than high school education, being uninsured, having co-morbidities, or having difficulty performing activities of daily living. Among adult long-term survivors of breast, prostate, colorectal cancer and lymphoma (5-10 years post-diagnosis), older respondents expressed better quality of life ($p = 0.004$), mental health ($p < 0.001$), but worse physical health ($p = 0.04$). Physical functioning was worse among those reporting low income ($p = 0.02$) and co-morbidities ($p = 0.003$). The evaluation of the impact of cancer score demonstrated that higher positive scores were associated with better mental health ($p = 0.0004$) and better overall quality of life ($p = 0.005$).[3]

Due to its nature, treatment outcome and psychological issues patients find their own coping strategies to deal with the outcome of the illness.[4] As the treatment for cancer is costing a lot of finance without really providing quality of life of such patients and adding on the adverse effect of treatment modality itself, people are moving away from the mainstream of treatment and trying to find out alternate options available for better self management of the deadly disease, Cancer. One such effective option available recently is the use of Graviola for certain types of cancer.[5]Shifting to the use of Graviola is one of those last measures undertaken to bring out changes in physical symptoms, emotional response and quality of life. There are many individual cases reported about positive effects of Graviola.[4]

Graviola is not just a cancer treatment; it has also displayed anti-parasitic, antimicrobial, anti-inflammatory, antirheumatic and cytotoxic properties, according to Memorial Sloan-Kettering Cancer Center. In some cases, Graviola has also been used as a pain killer and the results were positive.[4]The Medical Journal of Nutrition and Cancer confirm the cancer inhibiting phytochemicals in Graviola. In a study on Graviola and breast cancer, scientists at Virginia Tech demonstrated that Graviola juice could reduce the growth of cancer without damaging healthy breast tissue. Mice which were given 200 mg of Graviola fruit extract per kg of food in their diet for five weeks had significant reduction in the protein expression in breast cancer. Overall, Graviola was able to reduce tumor growth by 32%.[6]

The investigator witnessed dramatic effect of Graviola on a patient with Liver cancer 4th stage at USA and recommended the same for two other patients with cancer bladder with metastasis to spine and lungs and another patient with Breast cancer. In both of them the tumor size shrunk as per PET scan and distressing symptoms such as pain, nausea and vomiting reduced. Therefore the researcher decided to undertake a systematic study with the aim to determine the impact of Graviola on Quality of Life of patients with cancer and to correlate the use of the Graviola with disease & selected background factors.

Materials & Methods:

The present study is a multicentric quantitative study and design used was Ex post facto Quasi Experimental. Baseline data from 216 patients with cancer and who were consuming Graviola were selected through convenient sampling. IERB consent was obtained. Data was collected by telephonic interview survey technique after obtaining oral consent through 3 main tools such as:

- **Section A:** Questionnaire for Demorgraphic data which included 7 items such as age, gender, and marital status, type of family, education, income, and medical history. In medical history,

information regarding chemotherapy, radiation and surgery was collected. The last item covered in this section was regarding Graviola treatment, reports of PET scan.

- **Section B:** Standardized tool for QOL of Cancer Patient – EORTC-QLQ-C30 (English & Hindi) to determine the quality of life of patients with cancer who consume Graviola. It included the questions pertaining to quality of life. Questions were asked regarding perception physical and mental health of patients with cancer during past week and rating of questions on overall health
- **Section C:** Opinionnaire on Graviola. This section included the opinion of patients with cancer regarding availability, consumptions, effects of Graviola on size of the tumor, side effects of conventional therapy e.g. chemotherapy, radiation, effect on sleep quality, pain, palatability, cost of Graviola treatment

The reliability of the tool was established by using inter rater method. During data collection phase, some of the subjects required counselling. The researcher provided counselling wherever required. One interview would last at least for half an hour. Anonymity and confidentiality was maintained throughout the study. Data was analysed through SPSS by using frequency and percentage, association of the data with selected demographic variables was done by ANOVA test.

Results:

Majority of the sample (44.4%) belonged to the age group of 46-60 years. Among which 59.3% were females and 40.7% were males. Majority of the samples (90.7%) were married, 132(61.1%) of the subjects belonged to joint family and 84(38.95%) subjects were from nuclear family. Majority of the subjects 106(49.1%) were graduates. 56.7% of the sample did not have trouble in doing strenuous activities. Only 3% had trouble in taking a long walks whereas 62% of the sample did not require any help with ADL. 62% of the sample showed significant reduction in pain. 90% sample stated that their sleep quality had been improved, 80% of the sample vocalized that all gastro intestinal problems such as lack of appetite, nausea, vomiting, diarrhoea were reduced. 58% sample stated there were significant reduction in feeling of anxiety, worry, and tiredness.

Table 1: Distribution of subjects according to their current medical treatment

N = 216

SR NO	CURRENT MEDICAL TREATMENT	f	%
1.	Graviola+ Chemotherapy	98	45.4
2.	Graviola+ Radiotherapy	19	8.8
3.	Graviola+ Chemo+ Radiotherapy	16	7.4
4.	Graviola alone	83	38.4

Impact of Graviola on Quality of Life:

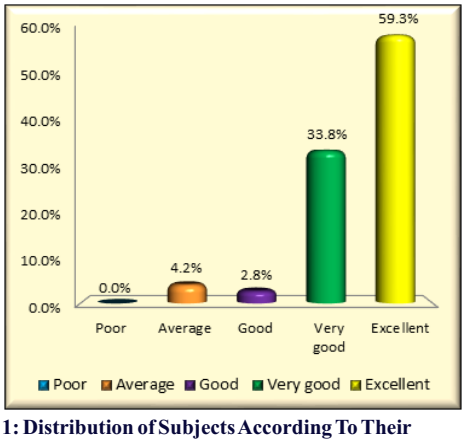

Figure 1: Distribution of Subjects According To Their

Figure 1 depicts the quality of life of the patients with cancer after consuming Graviola treatment. 128 (59.3%) of the total subjects were scoring excellent for the QOL. Followed by 73(33.8%) of the subjects said they were having very good quality of life. Very few 9(4.2) and 6(2.8%) felt they were having average and good quality of life respectively. All of the subjects said that their quality of life was improved after consumption of Graviola. The calculated 't' value was found to be 7.48. As the calculated 't' value was greater than the table 't' value of 1.98 at 0.05 level of significance with the degrees of freedom 215 so null hypothesis (H_0) was rejected and alternate hypothesis (H_1) was accepted. So it shows there was an impact of Graviola in QOL of patients with cancer.

Table 2: Distribution of subject according to question wise mean of Quality of Life after Graviola treatment.

Qn. No.	Assessment Of Q.O.l.	Max Score	Mean	S.D.
1.	Do you have any trouble doing strenuous activities, like carrying a heavy shopping bag or a suitcase	4	1.65	0.84
2.	Do you have any trouble taking a long walk	4	1.78	0.79
3.	Do you have any trouble taking a short walk outside of the house?	4	1.57	0.78
4.	Do you need to stay in bed or a chair during the day?	4	1.50	0.78
5.	Do you need help with eating, dressing washing yourself or using the toilet?	4	1.58	0.79
6.	Were you limited in doing either your work or other daily activities?	4	1.50	0.79
7.	Were you limited in pursuing your hobbies or other leisure time activities?	4	1.50	0.70
8.	Were you short of breath?	4	1.63	0.88
9.	Have you had pain?	4	1.98	0.77
10.	Did you need to rest	4	1.99	0.85
11	Have you had trouble sleeping?	4	1.70	0.91
12	Have you felt weak?	4	1.93	0.75
13	Have you lacked appetite?	4	1.75	0.75
14	Have you felt nauseated?	4	1.60	0.75
15	Have you vomited?	4	1.50	0.67
16	Have you been constipated?	4	1.51	0.62
17	Have you had diarrhea?	4	1.50	0.67
18	Were you tired?	4	2.07	0.76
19	Did pain interfere with your daily activities	4	1.68	0.83
20	Have you had difficulty in concentrating on things, like reading a newspaper or watching television	4	1.63	0.80
21	Did you feel tense?	4	1.95	0.68
22	Did you worry?	4	1.79	0.68
23	Did you feel irritable?	4	1.78	0.80
24	Did you feel depressed?	4	2.03	0.71
25	Have you had difficulty remembering things?	4	1.62	0.82
26	Has your physical condition or medical treatment interfered with your family life?	4	2.04	1.22
27	Has your physical condition or medical treatment interfered with your social activities	4	1.92	1.14
28	Has your physical condition or medical treatment caused you financial difficulties	4	2.25	1.27
29	How would you rate your overall health during the past week?	7	4.96	1.17
30	How would you rate your overall quality of life during the past week?	7	4.99	1.27

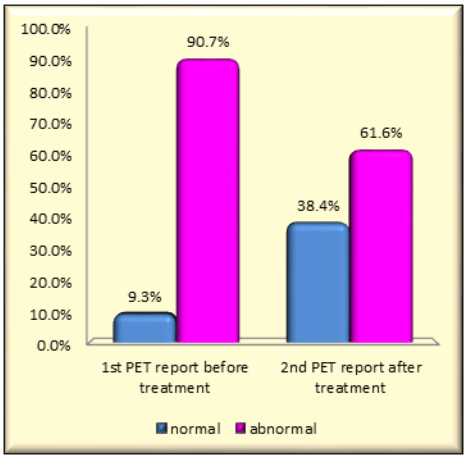

Figure 2: Assessment of PET Report Before and After Treatment

The figure no 2 shows the assessment of PET report before and after treatment. 90.7% subjects had abnormal report before treatment which significantly reduced to 61.6% and 9.3% subjects had normal report before which increased to 38.4%. The calculated 't' value was found to be 7.48. As the calculated t value was greater than the table 't' value of 1.98 at 0.05 level of significance with the degrees of freedom 215 suggested that there was significant difference between the 1st PET report before treatment and 2nd PET report after treatment .Hence there was difference in the QOL of patient with cancer with the use of Graviola

Assessment of Response to Opinionnaire among Patients with Cancer :

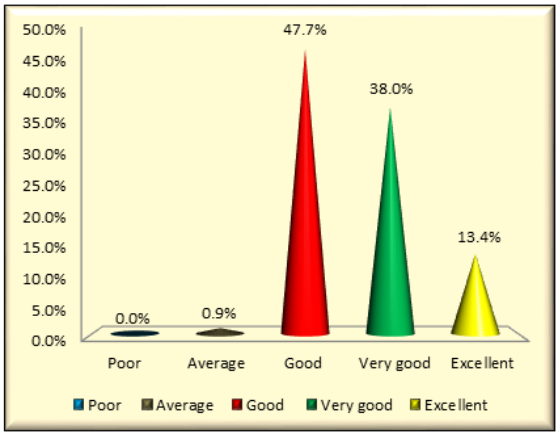

Figure 3: Distribution of Subjects According To Their Level of Responses to Opinionnaire

The figure no 3 shows the responses of subjects to the opinionnaire regarding Graviola treatment. 103 (47.7%) of the subjects stated that it was good treatment. 82 (38 %) said that it was very good treatment. 29 (13.4%) of the subjects said it was excellent form of treatment in cancer.

Regarding the association with background factor, calculated 'F' value for Family Income was (3.75) more than the table value (3.04) at p=0.05 Hence none of the background factor was associated with the findings of QOL except family income.

Discussion:

Effect of Graviola on reducing the tumour size in present study is in line with a similar study which demonstrated that a Graviola Fruit Extract (GFE) significantly down regulated EGFR gene expression and inhibited the growth of BC cells and xenografts. GFE selectively inhibited the growth of EGFR-over expressing human BC (MDA-MB-468) cells (IC_{50} = 4.8 μg/ml) but had no effect on non-tumorigenic human breast epithelial cells (MCF-10A). GFE significantly down regulated EGFR mRNA expression, arrested cell cycle in the G0/G1 phase, and induced apoptosis in MDA-MB-468 cells. In the mouse xenograft model, a 5-wk dietary treatment of GFE (200 mg/kg diet) significantly reduced the protein expression of EGFR, p-EGFR, and p-ERK in MDA-MB-468 tumors by 56%, 54%, and 32.5%, respectively. Overall, dietary GFE inhibited tumor growth, as measured by wet weight, by 32% (P< 0.01). These data showed that dietary GFE induced significant growth inhibition of MDA-MB-468 cells in vitro and in vivo through a mechanism involving the EGFR/ERK signaling pathway, suggesting that GFE may have a protective effect for women against EGFR-over expressing BC.[4]

Conclusion:

The research study was conducted by the researcher with the purpose of determining the impact of Graviola on the quality of life of patients with cancer. The findings of the study showed that Graviola consumption had improved the quality of life of patients with cancer. The study has also come out with untended outcome such as effect of Graviola on reducing the tumour size and decreasing the side effects of chemotherapy and radiation therapy. Thus the study has become a means to understand the multifunctional effect of Graviola on the deadly disease, cancer. However further extensive researches are required to elicit the endpoint benefits of Graviola which can be a boon for cancer patients.

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