
Review Article**Analysis of Reasons for Poor Quality Of Life in Cancer Patients***Dr G.Sudhakar¹, Dr K.Maruthi Devi²*¹Associate Professor, Department of Pathology, Guntur Medical College, Guntur, A.P, India²Assistant professor, Department of Pathology, Guntur Medical College, Guntur, A.P, India**Corresponding author: Dr K.Maruthi Devi²**

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Abstract: Over the ten years, Quality of Life (QOL) investigations of cancer patients have become an important evaluation parameter in the cancer clinical research and treatment evaluation programs. This study was carried out in tertiary hospital located at Guntur, Andhra Pradesh, India. We assessed the overall QOL of patients affected by cervical, breast, head and neck, and stomach cancers by using EORTC QLQ C-30, QLQ-BR23, QLQ-H&N35, QLQ-CX24, and QLQSTO22 on ≤ 2 cycles as Review-I and ≥ 5 cycles as Review-II. The data were analyzed for 104 individuals with mean age of 46.1 ± 11.2 years. In head and neck cancer patients, physical, role, social function, pain, insomnia, diarrhoea, swallowing, speech problems, dry mouth were significant ($P < 0.05$). breast cancer patients, physical, role function, future perspective, fatigue, pain, arm symptoms and upset by hair loss were significant ($P < 0.05$). In stomach cancer patients, physical, role function, nausea and vomiting, pain, financial problems, Dysphagia, reflux symptoms and eating restrictions were significant ($P < 0.05$). In cervical cancer patients, physical, emotional function, fatigue, nausea and vomiting, pain, insomnia, symptom experience scale, menopausal symptoms were significant ($P < 0.05$). Most of the findings are similar to earlier studies, which shows that, QOL was predominantly influenced by the above mentioned factors in this study population and they also have some interesting implications for management of cancer.

Key Words: Cervical cancer, Breast cancer, Stomach cancer, Head and Neck cancer, Quality of Life (QOL)

I. INTRODUCTION

In 1920 Quality of Life (QOL) was first mentioned in a book of economics and welfare by Pigou^[1]. The concept of QOL was first introduced in population surveys of United States during 1960s and 70s, to investigate the level of well-being^[2]. World Health Organization (WHO) defines QOL as individual perception of life, values, objectives, standards and interests in the frame work of culture. Cancer is one of the most important health concerns of today and evaluating QOL in cancer patients is an increasingly important issue^[3]. The cancer specific QOL can be related to all stages of the disease^[4,5]. QOL is increasingly being used as a primary outcome measure in evaluating the effectiveness of cancer treatment^[6-9]. The long-term cancer survivors mainly face social/emotional support, health habits, spiritual/philosophical view of life and body image concerns^[10-13]. The European Organisation for Research and Treatment of Cancer (EORTC) QLQ-C30 is a cross culturally accepted and widely used instrument for assessing the health related quality of life (HRQOL) of cancer patients^[14]. Palliative care aims to improve the QOL of people living with a life threatening illness and that of their families^[15]. In order to achieve this aim, there is a need to evaluate the QOL and factors that affect it, which may help as a guide to health care personnel^[16]. Even though there is an availability of many publications on QOL exploring with different disease groups, a limited number of studies have evaluated QOL in cancer patients in South India.

Therefore, this study was carried out that would allow us to evaluate the QOL and affecting factors on it among the study population. Information from QOL studies may help to decide about the relative effectiveness of cancer treatment, enhancing patients' decision making by providing them data regarding the side-effects of such treatment, improving the organization and quality of cancer care.

II. MATERIALS AND METHODS

This study was carried out at Government General Hospital, a territory care hospital, a 1200 bedded teaching hospital located at Guntur in the state of Andhra Pradesh, India. Present study was approved by the Human Ethics Committee of the medical college/hospital. Study recruited a consecutive sample of cancer patients attending the outpatient unit of the Department of Oncology, between January and June 2011. Inclusion criteria included age not less than 19 years, receiving any cancer treatment and exclusion criteria included the ambulatory and terminally ill patients that means poor performance status. During data collection, patients were informed about the study using patient information form and the written consents were obtained from the patients or their caregivers. Patient demographic data were entered into the specially designed data entry form. The questionnaires were administered (interviewed) to the patients twice, Review-I on ≤ 2 cycles followed by Review-II on ≥ 5 cycles

treatment.

Quality of Life (QOL) Questionnaires:

QOL was assessed by using a series of interviews using standard questionnaires. QLQ-C30, the core questionnaire, is the contribution of more than a decade of research. Various modules like Head & Neck cancer module (QLQ-H&N35), Cervical cancer module (QLQ-CX24), Breast cancer module (QLQ-BR23), Gastric module (QLQ-STO22) were used among patients. These modules have been proven to have good validity and reliability properties both for the English original and the translation into Telugu.

Statistical analysis:

The numerical data obtained from the study were analyzed and the significance of difference was estimated by using statistical methods. Data were expressed in percentage, mean and standard deviation as applicable. The QOL questionnaires administered were statistically analyzed, comparison between reviews was done by the non-parametric tests like Willcoxon signed rank test and Spearman's correlation test, which were performed using computer based SAS Version 9.1.3 (SAS Institute Inc., Cary, NC, USA). P-value less than 0.05 were considered as statistically significant.

3. RESULTS

A total of 104 cancer patients were recruited in the study, out of which 39.42% (41/104) were male and 60.57% (63/104) were female patients. Among the study population 39.42% (41/104) have breast cancer, 31.73% (33/104) have head and neck cancer, 14.42% (15/104) have cervical cancer and 14.42% (15/104) have stomach cancer. The mean age of study population was found to be 46.1 ± 11.2 years. The age distribution of the study population is given in Table 1. The study population was also screened for the presence of comorbidities. Characteristics of the study population are given in Table 2. Study population was subjected to various laboratory investigations like hemoglobin (Hb), erythrocyte sedimentation rate (ESR), RBC, WBC, platelet count and creatinine. The reason for patient's admission to the study site like nipple discharge, abdominal pain, difficulty in swallowing and growth in oral cavity were thoroughly screened. In combination doxorubicin, vincristine and cyclophosphamide were the most commonly prescribed drugs for breast cancer. Of overall study population, 32.69% (34/104) were treated with surgery and supported by chemotherapy.

The Qualities of Life of the study population were assessed and the obtained values were subjected to statistical analysis by comparing the QOL scores. In breast cancer patients, physical, role function, future perspective in functional scales and fatigue, pain, arm symptoms, upset by hair loss in symptoms scale were found to be significant ($P < 0.05$). The global health status (GHS) when paired with physical, role function, body image, future perspective in functional scales and insomnia, breast symptoms, arm symptoms in symptoms scale were found to be significantly correlating ($P < 0.05$). In head and neck cancer patients, physical, role, social function in functional scales and pain, insomnia, diarrhoea, swallowing, speech problems, dry mouth in symptoms scales were found to be significant ($P < 0.05$). The GHS when paired with physical, social function in functional scales and pain, insomnia, speech problems, trouble with social eating, nutritional supplements, feeding tube, weight loss in symptoms scales were significantly correlating ($P < 0.05$). In cervical cancer patients, physical,

emotional function in functional scales and fatigue, nausea and vomiting, pain, insomnia, symptom experience scale, menopausal symptoms in symptoms scales were found to be significant ($P < 0.05$). The GHS when paired with physical, emotional functions in functional scales and fatigue, nausea and vomiting, pain, insomnia, sexual/vaginal functions, menopausal symptoms in symptoms scales were found to be significantly correlating ($P < 0.05$). In gastric cancer patients, physical, role function in functional scales, nausea and vomiting, pain, financial problems, dysphagia, reflux symptoms, eating restrictions in symptoms scales were found to be significant ($P < 0.05$). The GHS when paired with physical, emotional, cognitive, social function in functional scales and fatigue, insomnia, appetite loss, diarrhoea, financial problems, reflux symptoms, eating restrictions, taste in symptoms scales were found to be significantly correlating ($P < 0.05$).

IV. DISCUSSION

QOL refers to "global well-being," including physical, emotional, mental, social, and behavioral components. In the last few years, a number of informative and valid QOL tools have become available to measure HRQOL^[3]. In fact, improving QOL is as important as the survival benefit that a pharmacological treatment may provide. However, this is not always the case. For example, Nemati et al., reported that the level of QOL in patients with leukemia was 87.5% lower than that in the control group^[17]. For instance, Hurny et al., shown that chemotherapy had a measurable adverse effect on QOL in women with node-positive operable breast cancer^[18]. The results from the current study indicate that disease burden may deteriorate the QOL in cancer patients. Rustoen et al., and Holzner et al., in two separate studies found that the extent to which QOL of cancer patients depends on the time elapsed since initial treatment, with an increase in the extent of the disease, a decrease in the QOL was observed^[19,20].

Diagnosis of the study population depending on the thorough screening revealed 31.73% (33/104) have head and neck cancer, that 39.42% (41/104) have breast cancer, 14.42% (15/104) have cervical cancer and 14.42% (15/104) have stomach cancer. The gender distribution of the study population revealed that females were mostly affected by cancer, which was up to 60.57% (63/104) in this area. One of the reasons behind this may be the inclusion of breast and cervical cancer patients. However, the past studies have shown that incidence of cancer is more predominant among women in this study site^[21]. The age distribution indicated that the adult and elderly people were commonly getting affected and similar findings were reported by other literature^[22]. Habitat is also a contributing factor for the cancer incidence and our study found that 77.88% (81/104) of the patients were having rural background since the rural population is more in this area. Our study found that 24.03% (25/104) having both smoking and alcoholism, 13.46% (14/104) were smokers, 3.84% (4/104) were alcoholics. This result does not clearly explicit the social habits and its influence on the disease state as explained in the literature^[23]. Among all the patients only 27.87% (29/104) were literate. This shows the illiteracy rate in the patient group. As illiteracy is a major factor for various cancers including cervical cancer of this patient population^[24], there is a need to cause awareness among illiterate population in this area. According to some researchers^[25], performance of marital role or duties, relationship with spouse, looking after the family are important regarding the QOL for Indian cancer patients and it was found that 21.15% (22/104) of our study population were

divorced and/or separated. Cohabitant status revealed that 11.53% (12/104) were living alone and 28.84% (30/104) were living with others like children or relatives. Of the total female population 49.20% (31/63) were in post-menopausal state. Occupationally, most of the patients were daily wages and housewives and they were 25% (26/104) each of the total patient population. The reasons behind may be uncertain. Body mass index of the patients was calculated and found that 76.92% (80/104) were having normal weight and 15.38% (16/104) of the patients were underweight. As the cancer treatment may deteriorate the weight of the patients, there is a chance of increasing in the number of underweight patients thereby reducing their QOL. Since most of patients were low socioeconomic, there is a need to implement the dietary counselling in this study site according to their financial background^[26]. Laboratory investigations like Hb, ESR were analyzed. It is a known fact that the treatment modalities for cancer will definitely reduce the Hb levels which ultimately leads to anemia^[27]. Hypertension was found as a major co-morbidity among 7.69% (8/104), followed by diabetes among 2.88% (3/104). The co-morbidities were very well treated with respective drugs. Main reasons for admissions included nipple discharge in breast among 36.53% (38/104) patients and difficulty in swallowing among 26.92% (28/104) patients, white discharge among 8.65% (9/104) patients and abdominal pain among 14.42% (15/104) patients. This shows the need for causing awareness about signs and symptoms for early detection of cancers among common public. Treatment patterns in this study site were following standards and the patients were treated by chemotherapy, radiotherapy, surgery, or the combination of them.

In the early phase after initial treatment (≤ 2 cycles), patients were having a good QOL in many areas. This is especially true for the functional scales and similar observations were also made by Dow et al.,^[28]. With regard to the emotional domain, clinical experience shows that fear about possible relapse and associated depressive reactions play an important role in the process of coping with the illness and its treatment. Majority of the women were housewives, having been responsible for the organization of households. The areas of life affected are those of physical and role functions, social well-being, cognitive functions, and sexuality. This pattern can be observed for physical symptoms like pain, fatigue, constipation and dyspnoea, which occurred in the same extent across all groups. A study by Ganz et al., reported similar results, indicating that a whole series of psychosocial and sexual problems not only continue to plague cancer patients, but might also worsen with time^[12].

Various breast cancer specific factors like physical, role function, future perspective, fatigue, pain, arm symptoms, upset by hair loss were affected and physical, role function, body image, future perspective, insomnia, breast, arm symptoms were influencing the GHS in breast cancer patients. The negative sign on the symptoms scale indicates a decrease in the symptoms after previous cycle treatment. Similar observations were found by previous studies^[29-31]. Various head and neck cancer specific factors like physical, role, social function, pain, insomnia, diarrhoea, swallowing, speech problems, dry mouth were affected and physical, social function, pain, insomnia, speech problems, trouble with social eating, nutritional supplements, feeding tube, weight loss were influencing the GHS in head and neck cancer patients. These findings are in supportive to past studies by Sonia et al.,^[32].

Similarly, in cervical cancer patients, various cervical cancer specific factors like physical, emotional function, fatigue, nausea and vomiting, pain, insomnia, symptom experience scale, menopausal symptoms were affected and physical, emotional function, fatigue, nausea and vomiting, pain, insomnia, sexual/vaginal functioning, menopausal symptoms were influencing the GHS. Past studies were also similar to this^[33]. Various stomach cancer specific factors like physical, role function, nausea and vomiting, pain, financial problems, dysphagia, reflux symptoms, eating restrictions were affected and physical, emotional, cognitive, social function, fatigue, insomnia, appetite loss, diarrhoea, financial problems, reflux symptoms, eating restrictions, taste were influencing the GHS of stomach cancer patients, which are comparable to the studies conducted by Paul et al.,^[34]. Most of these findings are similar to the past studies in the respective type of cancer and therefore, there is a need to focus on all these aspects among various types of cancer patients.

In breast cancer, physical, role function, future perspective, fatigue, pain, arm symptoms, upset by hair loss and in head and neck cancer, physical, role, social function, pain, insomnia, diarrhoea, swallowing, speech problems, dry mouth were significantly affected. Similarly in cervical cancer, physical, emotional function, fatigue, nausea and vomiting, pain, insomnia, symptom experience scale, menopausal symptoms and in stomach cancer, physical, role function, nausea and vomiting, pain, financial problems, dysphagia, reflux symptoms, eating restrictions were significantly affected. These findings have shown that Health services should be planned keeping in mind that the impact of cancer treatment in each patient, the correlation between QOL and number of treatment cycles and factors influencing the patient's QOL.

V.CONCLUSION

There is a strong correlation between QOL and number of treatment cycles and QOL was mostly influenced by specific cancer related factors among the South Indian cancer patient population. So health services should be planned keeping in mind an entire life perspective and there is a need to understand the underlying factors in the patient's QOL, and consider the impact of cancer treatment in each patient

REFERENCES

- [1] Pigou AC. The Economics of Welfare. London: Mac Millan; 1920. p. 7.
- [2] Campbell A, Converse PE, Rodgers WL. The Quality of American Life: Perceptions, Evaluations, and Satisfaction. New York: Russel Sage Foundation; 1976.p.317.
- [3] Rizzo PB, Maronato F, Marchiori C, Gaya A. Long-term quality of life after total laryngectomy and postoperative radiotherapy versus concurrent chemoradiotherapy for laryngeal preservation. Laryngoscope 2008;118:300-6.
- [4] Thatcher N, Hopwood P, Anderson H. Improving quality of life in patients with non-small cell lung cancer: research experience with gemcitabine. Eur J Cancer 1997;33:8-13.
- [5] Hornquist JO. Quality of life: concept and assessment. Can J Med 1989;18:69-79.
- [6] Guyatt G, Feeny DH, Patrick DL. Measuring health-related quality of life. Ann Intern Med 1993;118:622-9.
- [7] Wilson IB, Cleary PD. Linking clinical variables with health related quality of life. A conceptual model of patient outcomes. J Am Med Assoc 1995;273:59-65.

- [8] Jurg B, Christoph DTH, Alan C, Richard DG. Applying Quality of Life principles in International Cancer Clinical Trials. In: Spilker B, editor. Quality of Life and Pharmacoeconomics in Clinical Trials. 2nd ed. Philadelphia: Lippincott-Raven; 1996. p. 693-706.
- [9] Testa MA, Simonson DC. Assessment of quality of life outcomes. *N Eng J Med* 1996;334:835-40.
- [10] Casso D, Buist DS, Taplin S. Quality of life of 5-10 year breast cancer survivors diagnosed between age 40 and 49. *Health Qual Life Outcomes* 2004;2:25.
- [11] Dorval M, Maunsell E, Deschane L, Brisson J, Masse B. Long-term quality of life after breast cancer: comparison of 8-year survivors with population controls. *J Clin Oncol* 1998;16:487-94.
- [12] Ganz PA, Desmond KA, Leedham B, Rowland JH, Meycrowitz BE, Belin TR. Quality of life in long term disease-free survivors of breast cancer: a follow-up study. *J Natl Cancer Inst* 2002; 94:39-49.
- [13] Kornblith AB, Herndon JE, Weiss RB, Zhang C, Zuckerman EL, Rosenberg S, et al. Long-term adjustment of survivors of early stage breast carcinoma 20 years after adjuvant chemotherapy. *Cancer* 2003;98:679-89.
- [14] Aaronson NK, Ahmedzai S, Bergman B, Bullinger M, Cull A, Duez NJ, et al. the European organisation for research and treatment of cancer QLQ-C30: a quality-of-life instrument for use in international clinical trials in oncology. *J Natl Cancer Inst* 1993;85:365-76.
- [15] The World Health Organisation. WHO expert committee: Cancer Pain Relief and Palliative Care. WHO Technical Report Series 804. Geneva: World Health Organisation; 1990. p. 11.
- [16] Rukiye P, Taflan S, Fusun A. Assessment of quality of life in Turkish patients with cancer. *Turk J Cancer* 2003;33:96-101.
- [17] Nemat M, Alhani F, Zandshahdi R. Quality of life in cancerous adolescences undergoing chemotherapy. In: Book of abstract. Tehran, Iran: 1st Congress in Quality of Life; 2003. p. 25.
- [18] Hurny C, Bernhard J, Coates AS, Castiglione-Gertsch M, Peterson HF, Gelber RD, et al. Impact of adjuvant therapy on quality of life in women with node-positive operable breast cancer. *Lancet* 1996;347:1279-84.
- [19] Rustoen T. Hope and quality of life, two central issues for cancer patients: a theoretical analysis. *Cancer Nurs* 1995;18:355-61.
- [20] Holzner B, Kemmler G, Kopp M, Moschen R, Schweigkofler H, Dunser M, et al. Quality of life in breast cancer patients-not enough attention for long-term survivors? *Psychosomatics* 2001;42:117-23.
- [21] Malothu N, Veldandi U, Yellu N, Devarakonda R, Yadala N. Pharmacoepidemiology of Cancer in Southern India. *Internet J Epidemiol* 2010;8. Available from: <http://archive.ispub.com/journal/the-internet-journal-of-epidemiology/volume-8-number-1/pharmacoepidemiology-of-cancer-in-southern-india.html#sthash.VAVdwsO7.dpbs> [Last accessed on 2013 Feb 26].
- [22] USC health magazine. The Age of Cancer Understanding how cancer and aging are tied together and manipulating those links to halt cancer's progression will put time on everyone's side, 2005. Available from: <http://www.usc.edu/hsc/info/pr/hmm/05fall/cancer.html> [last accessed on 26 February 2013]
- [23] Damodar G, Smitha T, Yedukondala Rao A. A descriptive epidemiological study of cancers at South Indian tertiary care hospital. *Res J Pharm Biol Chem Sci* 2011;2:907-15.
- [24] Damodar G, Rao AY. A rare clinical presentation of Carcinoma Cervix - Ascites. *Indian J Pharm Pract* 2011;4:57-60.
- [25] Santosh C. What's important for quality of life to Indians - in relation to cancer. *Indian J Palliat Care* 2003;9:62-70.
- [26] Damodar G, Vijayakumar S. Implementation of Dietary Counselling for Low Socioeconomic Cancer Patients; A Review. *Int J Comm Pharm* 2011;4:5-13.
- [27] Stacy SS, Michael A. Treating chemotherapy-induced anemia following the revised labeling for ESAs. *Comm Oncol* 2009;6:279-82.
- [28] Dow KH, Ferrell BR, Leigh S, Ly J, Gulasekaram P. An evaluation of the quality of life among long-term survivors of breast cancer. *Breast Cancer Res Treat* 1996;39:261-73.
- [29] Safae A, Moghimi DB, Zeighami B, Tabatabaee HR, Pourhoseingholi MA. Predictors of quality of life in breast cancer patients under chemotherapy. *Indian J Cancer* 2008;45:107-11.
- [30] Wilfried T, Svetlana J, Zdravko Z, Nevena T, Harald JH, Miodrag M. Quality of Life and Neutropenia in Patients with Early Stage Breast Cancer: A Randomized Pilot Study Comparing Additional Treatment with Mistletoe Extract to Chemotherapy Alone. *Breast Cancer* 2009;3:35-45.
- [31] Dhruva A, Dodd M, Paul SM, Cooper BA, Lee K, West C, et al. Trajectories of Fatigue in Patients with Breast Cancer before, During, and after Radiation Therapy. *Cancer Nurs* 2010;33:201-12.
- [32] Sonia AD, David LR, Marcia V, Karen EF, Michael TL, Carol B, et al. Depressive Symptoms, Smoking, Drinking, and Quality of Life Among Head and Neck Cancer Patients. *Psychosomatics* 2007;48:142-8.
- [33] Giancarlo S, Maria GS. The quality of life in cancer patients: a cognitive approach. *Eur J Intern Med* 2001;12:35-42.
- [34] Paul JM, Barbara P, Joel ED, Georgia RS, Sonia AI. The relationship between fatigue and quality of life and inflammation during anthracycline-based chemotherapy in breast cancer. *Biol Psychol* 2005;69:85-96.