



## Quality of life of patients with colorectal cancer who were receiving complementary therapy\*

*Qualidade de vida de pacientes com câncer colorretal em terapia adjuvante*

*Calidad de vida de pacientes con cáncer de rectocolon en terapia adyuvante*

Adriana Cristina Nicolussi<sup>1</sup>, Namie Okino Sawada<sup>2</sup>

### ABSTRACT

**Objective:** To evaluate quality of life and the main demographic, clinical, and therapeutic characteristics of patients with colorectal cancer. In addition, the objective of the study was to examine the relationship between those characteristics and quality of life. **Methods:** This cross-sectional study was conducted in a specialized oncology center in Ribeirão Preto. The sample consisted of 22 patients with colorectal cancer who were receiving complementary therapy. Data were collected from July 2006 through September 2007. The quality of life Core-30 Questionnaire was used to measure quality of life. **Results:** Patients had a satisfactory quality of life score (mean = 79.13). The most affected domains were emotional functioning, pain, insomnia, and fatigue. Women had worse scores on emotional and cognitive functioning, pain, insomnia, fatigue, constipation, and loss of appetite. Patients who were receiving radiotherapy had a worse pain score. Patients who had no symptoms during chemotherapy had higher scores on quality of life. **Conclusion:** The quality of life scores in this sample of patients was satisfactory. Lower quality of life scores were observed among women, and patients who were receiving radiotherapy and/or had side effects of chemotherapy. **Keywords:** Quality of life; Colorectal neoplasms; Oncologic nursing

### RESUMO

**Objetivo:** Avaliar a qualidade de vida, identificar os domínios afetados nos pacientes com câncer colorretal, caracterizar os dados sócio-demográficos, clínicos e terapêuticos e correlacioná-los aos domínios da qualidade de vida. **Métodos:** Estudo transversal, realizado no Centro Especializado de Oncologia de Ribeirão Preto com 22 pacientes com câncer colorretal em terapia adjuvante, entre julho/ 2006 a setembro/ 2007. Utilizou-se o instrumento Quality of Life Core-30-Questionnaire. **Resultados:** A qualidade de vida foi considerada satisfatória (média = 79,13). Os domínios mais afetados foram: Função Emocional e sintomas dor, insônia, fadiga. Nas correlações, as mulheres destacaram-se negativamente, apresentando piores escores nas Funções Emocional, Cognitiva e sintomas: dor, insônia, fadiga, constipação e perda de apetite. Os pacientes em radioterapia relataram mais dor e os assintomáticos à quimioterapia são os que obtiveram melhor qualidade de vida geral. **Conclusão:** A qualidade de vida foi satisfatória, relativamente pior nas mulheres, em radioterapia e que apresentaram efeitos colaterais da quimioterapia. **Descritores:** Qualidade de vida; Neoplasias colorretais; Enfermagem oncológica

### RESUMEN

**Objetivo:** Evaluar la calidad de vida, identificar los dominios afectados en los pacientes con cáncer de rectocolon, caracterizar los datos socio-demográficos, clínicos y terapéuticos y correlacionarlos a los dominios de la calidad de vida. **Métodos:** Estudio transversal, realizado en el Centro Especializado de Oncología de Ribeirão Preto con 22 pacientes con cáncer de rectocolon en terapia adyuvante, entre julio/ 2006 a setiembre/ 2007. Se utilizó el instrumento Quality of Life Core-30-Questionnaire. **Resultados:** La calidad de vida fue considerada satisfactoria (media = 79,13). Los dominios más afectados fueron: Función Emocional y síntomas dolor, insomnio, fatiga. En las correlaciones, las mujeres se destacaron negativamente, presentando peores escores en las Funciones Emocional, Cognitiva y síntomas: dolor, insomnio, fatiga, constipación y pérdida del apetito. Los pacientes en radioterapia relataron más dolor y los asintomáticos a la quimioterapia son los que obtuvieron mejor calidad de vida general. **Conclusión:** La calidad de vida fue satisfactoria, relativamente peor en las mujeres, en radioterapia y que presentaron efectos colaterales de la quimioterapia. **Descriptores:** Calidad de vida; Neoplasias colorrectales; Enfermería oncológica

\* Study accomplished at the Oncology Specialized Center – CEON – Ribeirão Preto (SP), Brazil.

<sup>1</sup> Graduate student at the Programa de Pós-Graduação em Enfermagem Fundamental at Escola de Enfermagem de Ribeirão Preto at Universidade de São Paulo – USP - Ribeirão Preto (SP), Brazil.

<sup>2</sup> Associate Professor at the Departament of Enfermagem Geral e Especializada at Escola de Enfermagem de Ribeirão Preto at Universidade de São Paulo - USP - Ribeirão Preto (SP), Brazil.

## INTRODUCTION

Cancer is a disease that affects people in the whole world and may bring some impacts to patients and families' lives in different ways, since the diagnosis acknowledgement until the treatment choice, its process, and the rehabilitation.

Colorectal cancer estimations for Brazil in 2008 were of 27 thousand new cases, of which 12,490 are males and 14,500 are females; it is the fifth most incident cancer to men and the fourth among women<sup>(1)</sup>.

Physical and emotional integrity alterations, such as discomfort, pain, disfigurement, dependence and self-esteem loss are reported by patients who realize deep changes to their quality of life in a short-term<sup>(2)</sup>.

Colorectal cancer and its treatment may cause adverse effects to the social function, including work and productive life, relationship with the family, partners and friends, and other interests and social activities<sup>(3)</sup>.

The disease and treatment impact to patients' well-being and functional results is a topic of growing interest for the colorectal cancer research<sup>(4)</sup>. Recently, several studies have been developed in order to assess such alterations in individuals' lives through the Quality of Life (QoL) and Health Related Quality of Life (HRQL) Assessments<sup>(2-4)</sup>.

The QoL was defined by the World Health Organization Quality of Life Group as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" p.1405<sup>(5)</sup>. It is implicit in this definition that the QoL concept is subjective, multi-dimensional and includes positive and negative assessment elements<sup>(6)</sup>.

A range of factors influence HRQL assessments, and they may vary according to each study, however, HRQL may be considered having a great mental, physical and social function level, as well as real life position (social role), which includes relationships, health perception, abilities, satisfaction with life and well-being. They may also include assessments of the patients' satisfaction level regarding the treatment, results, health state, and future perspectives<sup>(7)</sup>.

Currently, there are several therapeutic modalities for cancer treatment, such as: surgery (curative, palliative) chemotherapy, and radiation therapy, which may be used isolated or associated, and an increasing number of researches assesses the QoL of colorectal cancer patients going through different treatment types<sup>(3,8-13)</sup>.

QoL measurements are considered essential to assess the impact caused by the treatment to patients' lives and, from such perspective, the present study aimed to assess the impacts to patients' QoL caused by colorectal cancer diagnosis and its consequent treatment.

The specific objectives were: to assess QoL, to identify the domains affected in colorectal cancer patients, to define social, demographic, clinical and therapeutic data, and correlate them with the QoL domains.

## METHODS

This is a quantitative, descriptive, exploratory and cross-sectional study, which used the European Organization for Research and Treatment of Cancer – Quality of Life Core-30-Questionnaire (EORTC QLQ-C30) instrument for data collection<sup>(14)</sup>.

The study was accomplished at the Oncology Specialized Center (CEON) in Ribeirão Preto – São Paulo. CEON is part of Beneficência Portuguesa Hospital, where ambulatory care services take place, through appointments, exams, treatment and follow up of adult patients with cancer, which come from the Brazilian Public Health System (Sistema Único de Saúde - SUS), insurance plans and private care, from Ribeirão Preto and surrounding regions.

It is considered a intentional sample – where typical subjects from the population being studied are selected by the researcher in purpose<sup>(15)</sup> – once it was comprised of 22 patients with a colorectal cancer diagnosis, from July 2006 to September 2007.

The inclusion criteria were: 18 year-old or older, with colorectal cancer diagnosis, in treatment at CEON for chemotherapy, radiotherapy and/ or post-operative, from the Public Health System and which agreed to participate in the research and to sign written informed consent.

Patients with others diagnosis and others cancers, patients who refused to participate in the study, and the ones who had some type of mental deficit which could interfere in their comprehension of or participation in the studies and interviews, were excluded.

The research project was approved by the Research Ethics Committee, and patients' identification was kept confidential, in compliance with CONEP's Resolution n.º 196/96<sup>(16)</sup>.

In order to classify patients, a questionnaire was created for the collection and identification of social and demographic data, with the following variables: sex, age, marital status, origin, profession/occupation, educational level, and religion; clinical and therapeutic data: diagnosis; surgery type and the date the procedure occurred if applicable (time in months); quantity of radiation sessions, if applicable; quantity of chemotherapy sessions, protocol, and side effects, if applicable.

The QLQ-C30 (Version 3.0) was used. It is a HRQL questionnaire validated for our population<sup>(17)</sup>, specifically for cancer patients. Its QoL model is multi-dimensional and EORTC group defines it according to the central elements of the functional status, cancer and treatment-

specific symptoms, psychological distress, social interaction, financial impact, perceived health status and overall QoL<sup>(7)</sup>.

It is comprised of 30 questions which cover five functional scales: physical, emotional, cognitive, social, and role functioning, a global health/ overall quality of life (QoL), three symptom scales in order to measure fatigue, pain, nausea and vomiting, five items to assess symptoms such as: dyspnoea, insomnia, appetite loss, constipation, diarrhea; and one item which assesses financial difficulties.

QLQ-C30 generates scores in the functional and symptoms scales. Each score is transformed in a scale from 0 to 100, according to EORTC guidelines, where 0 denotes the worst function case and 100, the best function case in the functional scales and in the QoL; with regards to the symptom item scales, 100 indicates there are more symptoms present and 0, less symptoms present.

For the data analysis, software Statistical Package for Social Science (SPSS for Windows) was used, and the internal consistency test, Cronbach's Alpha, to test the instrument reliability. The average and standard deviation were calculated for the data descriptive analysis; and the parametric test, ANOVA (variability analysis) was used to compare the instrument QoL domains with the social, demographic, clinical and therapeutic data.

## RESULTS

The sample was comprised of 22 patients after the inclusion and exclusion criteria application. With regards to the social and demographic characteristics, 13 (59.1%) patients were males and 9 (40.9%) were females; there were 11 (50%) patients with ages ranging between 60 and 80, 10 (45.5%) patients were between 40 and 60, and one (4.5%) was between 20 and 40. In relation to marital status, 11 (50%) patients were married, 6 (27.3%) were widowed, 3 (13.6%) were single, and 2 (9.1%) were divorced and/or in common law partnership. Regarding origin, all subjects were from Ribeirão Preto region.

With regards to profession, 14 subjects (63.7%) were retired, housewives, housekeepers and cooks; 3 (13.7%) were welders and garage workers; 2 (9.1%) worked with commerce; and 3 (4.5%) patients were teachers, goldsmiths, and drivers. Concerning the educational level, 13 (59.1%) had only concluded basic education, 5 (22.7%) had finished high school, and 4 (18.2%) had graduated in superior education. About religion, most of them, 16 (72.7%) were Catholics, 4 (18.2%) were Christian, and 2 (9.1%) were Spiritualists.

Relative to clinical and therapeutic data, 16 (72.8%) patients presented colon cancer diagnosis, 5 (22.7%) rectal cancer, and only 1 um (4.5%) presented metastatic rectal cancer. With regards to treatment type, 18 (81.8%) had gone through surgeries within the past 20 months, and 16 of them (72.7%) had had their affected organs and adjacent

partially removed. Only 7 (31.8%) patients had gone through radiation sessions, and those had been less than 30.

Concerning chemotherapy (CT), all patients were going through it, from which 21 (95.5%) were in the first sessions and the predominant protocol was 5-Fluorouracil (5-FU) + Leucovorin (LV) for 13 (59.1%) patients; other protocols were: 5-FU for 4 (18.2%) patients, 5-FU + LV + Oxaliplatin for 3 (13.6%), 5-FU + Cisplatin for 2 (9.0%) patients.

The side effects relative to chemotherapy presented by the patients were also assessed, and 16 (72.7%) patients had no symptoms, 4 (18.2%) patients presented physical symptoms such as: heat, sweat, malaise, weakness, and dizziness, among others, one (4.5%) patient presented emotional symptoms: depression, distress and/or irritability, and one (4.5%) patient presented physical, emotional and gastrointestinal symptoms, such as nausea, vomits, constipation and/or diarrhea.

## Quality of life

About the instrument psychometric characteristics for the studied sample, Cronbach's Alpha coefficient was of 0.89, indicating the instrument reliability for the sample being studied.

The mean scores and the standard deviation of the functional scales, QoL, symptoms and items from QLQ-C30 are presented in Table 1. The Quality of Life reached a 79.13 mean, being possible to state, thus, that patients consider their QoL satisfactory, once it is close to 100 (maximum score).

In the functional scales: for physical, cognitive, social and role functions, means range from 73.68 to 81.18, demonstrating a satisfactory level. For the emotional function, though, the mean 65.45 reveals the patients felt tense, worried, irritated and/or depressed, as demonstrated by the answers given to questions 21 to 24 of the instrument.

**Table 1-** Mean and standard deviation of QLQ-C30 instrument scales, CEON, July/2006 to Sep/2007

| Scales and Symptoms                 | Mean  | Standard deviation |
|-------------------------------------|-------|--------------------|
| Global Health/ Quality ofLife (QoL) | 79.13 | 17.40              |
| Physical Function (PF)              | 81.18 | 22.65              |
| Role Function (RF)                  | 76.64 | 32.34              |
| Emotional Function (EF)             | 65.45 | 29.01              |
| Cognitive Function (CF)             | 80.55 | 22.64              |
| Social Function (SF)                | 73.68 | 31.04              |
| Fatigue                             | 17.15 | 26.92              |
| Nausea and Vomiting                 | 3.78  | 10.19              |
| Pain                                | 24.98 | 34.40              |
| Dyspnoea                            | 1.50  | 7.04               |
| Insomnia                            | 24.09 | 37.17              |
| Appetite Loss                       | 13.55 | 28.33              |
| Constipation                        | 16.59 | 32.05              |
| Diarrhea                            | 1.50  | 7.04               |
| Financial Difficulties (FDif)       | 24.14 | 37.27              |

**Table 2** – Mean, standard deviation and statistical significance of QLQ-C30 application with social and demographic data of the colorectal cancer patients - CEON, July/2006 to Sep/2007

| Scale         | Social and demographic Data | Variable                 | Mean   | Standard deviation | P value |
|---------------|-----------------------------|--------------------------|--------|--------------------|---------|
| EF            | Sex                         | Feminine                 | 50.44  | 29.49              | 0.040   |
|               |                             | Masculine                | 75.85  | 24.64              |         |
| CF            | Sex                         | Feminine                 | 63.33  | 21.58              | 0.001*  |
|               |                             | Masculine                | 92.46  | 14.52              |         |
| Fatigue       | Sex                         | Feminine                 | 35.77  | 34.13              | 0.004   |
|               |                             | Masculine                | 4.26   | 7.22               |         |
| Pain          | Sex                         | Feminine                 | 51.82  | 37.69              | 0.001*  |
|               |                             | Masculine                | 6.40   | 14.49              |         |
| Insomnia      | Sex                         | Feminine                 | 44.22  | 43.97              | 0.031   |
|               |                             | Masculine                | 10.15  | 24.79              |         |
| Appetite Loss | Sex                         | Feminine                 | 29.44  | 38.73              | 0.024   |
|               |                             | Masculine                | 2.54   | 9.15               |         |
| Constipation  | Sex                         | Feminine                 | 33.22  | 40.83              | 0.039   |
|               |                             | Masculine                | 5.08   | 18.31              |         |
| SF            | Marital Status              | Single                   | 83.33  | 28.87              | 0.054   |
|               |                             | Married                  | 56.36  | 32.68              |         |
|               |                             | Widowed                  | 94.50  | 13.47              |         |
|               |                             | Divorced                 | 92.00  | 11.31              |         |
|               |                             | Teacher                  | 100.00 | —                  |         |
| FDif          | Profession                  | Commercial worker        | 66.50  | 47.38              | 0.040   |
|               |                             | Goldsmith                | 66.00  | —                  |         |
|               |                             | Driver                   | 0.00   | —                  |         |
|               |                             | Welder and Garage worker | 0.00   | 0.00               |         |
|               |                             | Retired, housewife, etc. | 16.57  | 31.24              |         |
| FDif          | Educational Level           | Basic                    | 7.62   | 14.47              | 0.002   |
|               |                             | High School              | 26.40  | 36.15              |         |
|               |                             | Superior                 | 75.00  | 50.00              |         |

\* *P value* ≤ 0,001 is highly significant

In the symptom scales, the predominant symptom was pain, with a 24.98 mean; followed by insomnia, fatigue, constipation, appetite loss, nausea and vomiting. Dyspnoea and diarrhea were the less frequent symptoms, with a 1.5 mean. In the financial difficulties scale, the mean was 24.14.

#### Correlations between QoL and social, demographic, clinical, and therapeutic data

When applying the ANOVA test in order to compare the results from QLQ scales with social and demographic data (Table 2) and with clinical and therapeutic data (Table 3), a *P value* smaller or equal to 0.05 was considered statistically significant.

There were not statistically significant correlations for QLQ scales and the social and demographic data: age and religion; nor were they found for clinical and therapeutic data: surgery type and date (time in months) if applicable, and quantity of chemotherapy sessions the patient was going through, when applicable.

Several statistically significant correlations were found for the social and demographic variables: sex, with Emotional, and Cognitive Functions, Fatigue, Pain,

Insomnia, Appetite loss, and Constipation scales; marital status with Social Function; and for profession and education level with Financial Difficulties (Table 2).

Regarding clinical and therapeutic variables, statistically significant correlations were found for the variables: radiotherapy with the Pain scale; quantity of radiotherapy sessions with Role Function, Insomnia, and Constipation scales; for Chemotherapy protocol with Cognitive Function, Pain, and Appetite loss scales; and for Chemotherapy side effects with Global QoL, Nausea and Vomiting, and Dyspnoea (Table 3).

#### DISCUSSION

In this study, concerning the sample's social and demographic characteristics, most of patients were beyond 40 years old, retired and housewives, married, Catholic, and with a low educational level, which are common to find in Brazilian Public Health System (SUS), healthcare services.

The sample's characteristics are similar to another study's<sup>(8)</sup> also developed in the city of Ribeirão Preto, which assessed the QoL of breast and bowel cancer

**Tabela 3** – Mean, standard deviation and statistical significance of QLQ-C30 application with clinical and therapeutic data of the colorectal cancer patients - CEON, July/2006 to Sep/2007

| Scale                | Clinic and therapeutic Data | Variable              | Mean   | Standard deviation | P value |
|----------------------|-----------------------------|-----------------------|--------|--------------------|---------|
| Pain                 | Radiotherapy                | Yes                   | 52.36  | 35.26              | 0.007   |
|                      |                             | No                    | 12.21  | 26.32              |         |
| RF                   | Radiotherapy sessions       | Up to 30              | 80.29  | 28.11              | 0.011   |
|                      |                             | > 30                  | 0.00   | —                  |         |
| Insomnia             | Radiotherapy sessions       | Up to 30              | 20.48  | 33.89              | 0.033   |
|                      |                             | > 30                  | 100.00 | —                  |         |
| Constipation         | Radiotherapy sessions       | Up to 30              | 9.43   | 21.24              | 0.000*  |
|                      |                             | > 30                  | 100.00 | —                  |         |
| CF                   | CT protocol                 | 5-FU + LV             | 90.00  | 12.59              | 0.001*  |
|                      |                             | 5-FU + Cisplatin      | 83.50  | 23.33              |         |
|                      |                             | 5-FU                  | 79.25  | 24.94              |         |
|                      |                             | 5-FU+LV+Oxalip.       | 39.33  | 9.24               |         |
| Pain                 | CT protocol                 | 5-FU + LV             | 10.25  | 19.88              | 0.043   |
|                      |                             | 5-FU + Cisplatin      | 41.60  | 35.36              |         |
|                      |                             | 5-FU                  | 33.30  | 45.15              |         |
|                      |                             | 5-FU+LV+Oxalip.       | 66.63  | 44.13              |         |
| Appetite Loss        | CT protocol                 | 5-FU + LV             | 2.54   | 9.15               | 0.017   |
|                      |                             | 5-FU + Cisplatin      | 50.00  | 70.71              |         |
|                      |                             | 5-FU                  | 8.25   | 16.50              |         |
|                      |                             | 5-FU+LV+Oxalip.       | 44.00  | 38.11              |         |
| QoL                  | CT side effects             | No symptoms           | 85.38  | 11.19              | 0.010   |
|                      |                             | Physical Effect       | 68.70  | 22.95              |         |
|                      |                             | Emotional Effect      | 58.30  | —                  |         |
|                      |                             | GI+ Phys+ Emot. Eff.  | 41.60  | —                  |         |
| Nauseas and Vomiting | CT side effects             | No symptoms           | 3.12   | 9.05               | 0.014   |
|                      |                             | Physical effect       | 0.00   | 0.00               |         |
|                      |                             | Emotional effect      | 0.00   | —                  |         |
|                      |                             | GI+ Phys+ Emot. Eff.  | 33.30  | —                  |         |
| Dyspnoea             | CT side effects             | No symptoms           | 0.00   | 0.00               | —*      |
|                      |                             | Physical effect       | 0.00   | 0.00               |         |
|                      |                             | Emotional effect      | 33.00  | —                  |         |
|                      |                             | GI+ Phys + Emot. Eff. | 0.00   | —                  |         |

5-FU (fluorouracil); LV (leucovorin); Oxalip. (oxalipatin); Eff. (side effects); GI (gastrointestinal); Phys (physical); Emot. (emotional); Qt=(chemotherapy).

\* P value  $\leq$  0,001 is highly significant.

diagnosed patients through QLQ-C30, first, in the beginning of the adjuvant chemotherapeutic treatment, and three months later, in three different clinics.

About Quality of Life, a study<sup>(3)</sup> developed in Germany, also using QLQ-C30 with colorectal cancer patients a year after the diagnosis and after undergoing some type of treatment (surgery, Chemotherapy and/or radiotherapy), found better scores for the Physical and Cognitive functions, and lower scores for the Emotional Function, with about 80% of the patients reporting they felt depressed, irritated, tense, or worried.

Regarding symptoms, this study patients<sup>(3)</sup> were more affected by fatigue and insomnia; similar to the present study results, however, pain was the predominant symptom found here.

When comparing QoL with social and demographic data, it is possible to notice several significant correlations (Table 2), nevertheless, the most remarkable one is the sex difference,

for this variable was correlated to seven QLQ-C30 items; men have reported better scores in the Emotional and Cognitive Functions scales than women, while women had the worst scores with regards to: pain, insomnia, fatigue, constipation, and appetite loss, all of which statistically significant.

Some differences concerning sex were found in the study<sup>(9)</sup> developed in Germany, which also used QLQ-C30, where men reported better scores for the Physical function while women had higher scores for insomnia, fatigue, appetite loss (statistically significant), and constipation (statistically non-significant) a year after such rectal cancer patients had gone through surgery procedures.

Another study<sup>(18)</sup>, developed in Spain, showed statistically significant results, whose QoL was worse for women than it was for men, as measured by the Nottingham Health Profile instrument.

Patients also reported having financial difficulties (mean = 24.14), mainly when working with commerce, as

teachers, and goldsmiths. Concerning educational level, patients who had completed superior education reported having more financial difficulties (mean = 75.00).

For correlations, the study<sup>(9)</sup> divided the sample into age groups (below and above 60 years old), and found significant differences. The group below 60 reported having more financial difficulties than the older, and the ones who had returned to work after the treatment reported having a better role function.

We believe that the present study patients reported having more financial difficulties due to the fact these patients were under treatment and away from work, while patients with other professions, including the retired, housewives, and the ones with a lower educational level (basic and high school) were less affected.

When QoL is related to the treatment type, patients going through radiotherapy reported feeling more pain than the ones who were not. The patients who had completed more than 30 radiotherapy sessions presented worse scores with regards to Role Function and more insomnia and constipation symptoms.

A study<sup>(10)</sup> from Switzerland which compared QoL through the QLQ-C30 between rectal cancer patients who had undergone radiotherapy sessions prior to the operation and the ones who had not, showed that radiated patients had significantly lower scores for the Social Function and higher scores for pain in comparison with the non-radiated patients.

Relative to the chemotherapy protocol, it was possible to observe that all patients received 5-FU either isolated or associated with other medications. Patients who received 5-FU + LV + Oxiplatin reported the worst Cognitive Function scores, more symptoms related to pain and appetite loss; the ones who received Cisplatin associated with 5-FU also reported feeling pain and more appetite loss in relation to the other schemes. Such drugs have neurotoxic effects and may be directly related to the symptoms manifestation and the Cognitive Function deterioration.

The cognitive function is a multi-dimensional concept that describes the resulting domains of a healthy brain performance, as demonstrated by studies<sup>(19)</sup>, such as attention and focus, executive function, information processing speed, language, motor function, space-visual ability, learning and memory; by using QLQ-C30, it is possible to measure the Cognitive Function with questions 20 and 25, which assess only focus and memory.

The cognitive deficit may also occur due to patient-related factors, such as high educational level and high IQ (Intellectual Quotient), low estrogen and testosterone levels<sup>(20)</sup>, patients with depression, comorbidity, traumatic brain injuries, and learning disabilities records, besides genetic factors<sup>(19-20)</sup>.

Concerning pain and appetite loss mainly associated to Oxaliplatin and Cisplatin protocols, both are composed

by platinum and cause peripheral neuropathy. Cisplatin causes paresthesia (mainly in the hands and feet), myalgia, pain, including jaw and throat<sup>(21)</sup>.

Oxaliplatin causes dose-cumulative sensitive peripheral neuropathy, mainly in the hands, feet, and also lips, triggered and worsened by cold temperatures (air or water), it also causes dysesthesia, paresthesia, and cramps, therefore, it is important to orient patients to avoid drinking cold liquids, and exposing themselves to cold temperatures or cold surfaces<sup>(21)</sup>.

When correlating QLQ-C30 scales with side effects of the Chemotherapy, it is possible to verify that patients with no symptoms present better Global QoL scores, and the ones who report having more symptoms present worse scores. These patients also presented more nausea and vomiting.

Another correlation found was between emotional symptoms related to chemotherapy and dyspnoea. Patients with emotional symptoms related to chemotherapy reported having dyspnoea while others did not.

Concerning Chemotherapy protocols, a study<sup>(11)</sup> which assessed QoL through the Uniscale and QLQ-C30 instruments in the United States of America for patients receiving 5-FU and eniluracil by mouth was found. Patients who had finished the treatment presented a significant clinic progress regarding general QoL, emotional function, appetite loss, and insomnia, when compared to data obtained before the treatment (baseline), while the physical function got worse.

In a study<sup>(12)</sup> developed in Italy, researchers applied an integrated psychological approach during a chemotherapeutic treatment with 5-FU + Folinic Acid + Oxaliplatin, using the Hospital Anxiety and Depression scale (HADS) instrument and the QLQ-C30. A significant anxiety decrease was found when compared to the pre-treatment according to the HADS. With regards to QLQ, scales remained immutable during the entire treatment, however, with lower scores for the emotional function and global QoL and higher scores for fatigue.

A study<sup>(13)</sup> developed in the United Kingdom, with post-operation patients receiving adjuvant Chemotherapy, assessed QoL through the State-Trait Anxiety Inventory (STAI) and QLQ-C30 instruments, before, during and after the treatment. Some differences were verified in STAI scores, indicating a general anxiety reduction over time. QLQ results demonstrate significant differences among scores for all variables, except for the cognitive function, nausea and vomiting, appetite loss and financial difficulties. The differences indicate a general improvement over time for the physical, emotional, social, and role functions, global QoL and pain.

In these studies, with a longitudinal section, it was possible to observe different chemotherapy schemes and different assessment situations, using QLQ-C30 and other instruments. It was testified that, in spite of demonstrating that patients

present functional and/or symptom scale deficits, there were improvements to the global QoL and other scales over time.

The present study, with a cross-sectional design, did not allow the assessment of QoL changes over time after treatment, and the small sample size does not allow results generalization. Besides, in this study, the protocols had statistically significant differences with only three scales (cognitive function, pain, and appetite loss), nevertheless, global QoL was considered satisfactory.

## CONCLUSION

The present study provided to assess the Quality of Life of colorectal cancer patients in adjuvant treatment, either chemotherapy, radiotherapy, and/or after a surgery. The mean QoL measured by the QLQ-C30 for this sample was of 79.13, considered satisfactory. The main QoL domains affected were the emotional function, pain, insomnia, and fatigue.

Results demonstrated that women had worse scores, statistically significant, reporting more emotional and cognitive problems and more symptoms, mainly pain.

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