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An analysis of the support and quality of live after the diagnosis and treatment of prostate cancer in the radiotherapy sector

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ABSTRACT

Prostate cancer is the most common chronic disease among men in most parts of the world. According to the National Cancer Institute (INCA) in Brazil in 2018, 68,000 new cases were registered. Among the main treatments the radiotherapy has been shown to be effective in controlling and curing the disease. However, it is noted that the patient satisfaction index is not the most encouraging and there is little research that points to the sup-port of the hospital team. The aim of this study was to collect data from medical records about the adverse effect of the disease and through questionnaire the level of knowledge about the disease and the support offered by sector and to make recommendations for radiotherapy units Data were collected from 147 patients and of that total, 51 answered the questionnaire. The survey also shows that there was little referral to the complementary therapeutic service during of treatment. It is identified that more than 50% them knew very little about prostate cancer and 42% had no participation in the choice of treatment. It is observed that it is difficult to insert support policies for patients with prostate cancer, the professionals who work in oncology and radiotherapy centers underestimate the effects of the disease. It is observed, through research, that many of the symptoms and debilitations could be mitigated if there was a greater interaction between the health team and the patient, reducing the effects of radiation and accelerating the patient's integration for the social environment.

Keywords: radiotherapy, support, quality of life, prostate cancer.

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1. INTRODUCTION

Prostate cancer is the most common chronic disease among men worldwide [1,2]. According to the National Cancer Institute (INCA), in Brazil, this type of malignancy loses only to skin cancer with 68,000 new cases registered in 2018 [3]. The classification of prostate cancer in the United States of America is not different and there is an average of 1 new diagnosis for each 6 men annually, being more than 200,000 diagnosed with the disease and approximately 30,000 will die [4,5].

In most cases, death is not the main fear on the part of these patients, but the several social, financial and psychological obstacles that they will face from then on [6]. One of the major concerns after the diagnosis of prostate cancer seems to be abandonment. Studies show that environmental factors such as family interaction, friendship, social and religious support may directly interfere with the effect of the treatment of these patients [7-9].

One of the most common treatments to fight prostate cancer is radiotherapy, which can be applied alone or combined with another treatment [6, 10]. The level of satisfaction with the modality depends on the decreased risk of death and of toxicities present during and after treatment [11, 12]. However, there are few studies that report the support of the hospital team in understanding the patient with these implications. In addition, the data collected show that the types of support received are not seen as the most appropriate by most patients [13-16]. The sharing of decisions is seen as an important topic in worldwide forums on prostate cancer, and as the “state of the art” by the American Urological Association [17].

The objective of research is to identify the quality of life of patients during the treatment of prostate cancer in the radiotherapy sector of the Hospital das Clínicas de São Paulo (HCFMUSP).

2. MATERIALS AND METHODS

The survey has the participation of 147 patients. This is a qualitative, retrospective and prospective study which began in April 2018 with data analysis from physical and digital medical records, from April 2017 to September 2019, at the Radiotherapy Institute (INRAD) of Hospital das Clínicas from Sao Paulo.

The data were collected in the radiotherapy service through of digital system (MOSAIQ and Laserfisher) or through medical records used by doctors and professionals of health to analyze the adverse effects of the disease. During radiotherapy treatment, 51 patients answered the questionnaire containing nine multiple-choice questions with the following subjects: knowledge about the disease, participation in the choice of treatment and support offered during treatment.

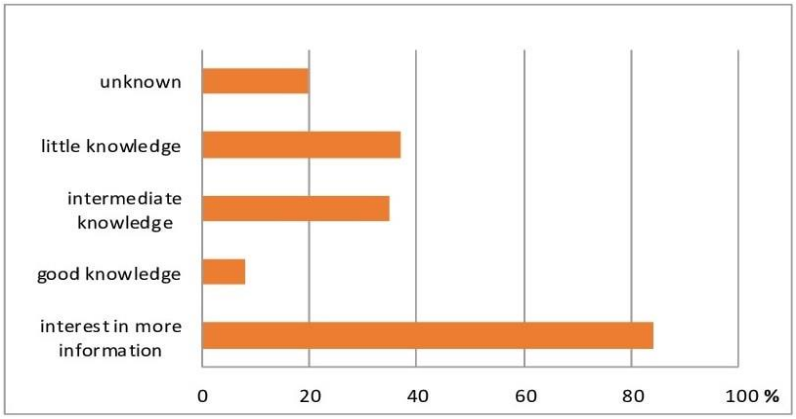
As agreed, the questions can be delivered by researcher or by an employee appointed by the coordinator from the radiotherapy sector, without this procedure interfering with the routine of the sector. For the convenience of the patient, the form can be filled out by a relative or a responsible person, and delivered at the next appointment.

The research was approved by the Ethics Committee of the Medical School of the University of São Paulo (FMUSP) and by the Post-Graduation Commission of the Institute of Energy and Nuclear Research (IPEN).

3. RESULTS AND DISCUSSION

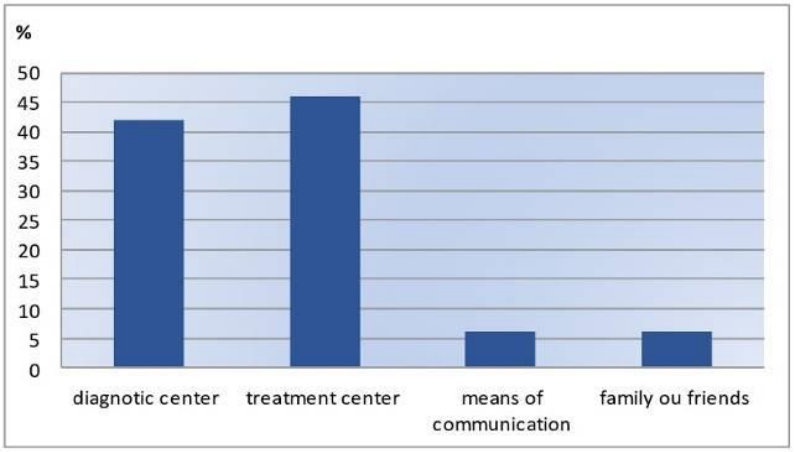
The in Figure 1 is shown to analyze the patient's knowledge about prostate cancer even before the discovery of the disease, this approach was fundamental for us have a generic knowledge of the population's interest in health care. The results showed: 20% of the patients had unknown about the disease, 37% had little knowledge, 35% had intermediate knowledge and only 8% had good knowledge. As can be seen, more than 50% of the patients had few or they unknown about the disease or knew little about prostate cancer.

Figure 1: *Level of knowledge of the disease before of diagnostic*



Follow-up then was questioned which means that they obtained information about the disease, as shown in Figure 2: 42% mentioned that they obtained information through the diagnosis local, 46% in treatment local, 6% through the means of communication (TV, radio, magazines, book, internet) and 4% through family members and friends.

Figure 2: *Form of knowledge obtained about prostate cancer*.



In the present study it is shown that although most patients are inserted in the family, themes that lead to the discussion of the disease are avoided, this may be explained due to the difficulty in sharing subjects that they consider complex and at the same time fear of expressing their anxieties and decisions and expectations. It was also evident that the diagnosis centers and treatment center play a prominent role in addressing these issues and in mediating knowledge. However, patients claim that incomplete questionnaires, it is difficult to understand, make it difficult to clarify their doubts [18].

The results shown in our survey are not the most encouraging in terms of the level of knowledge about prostate cancer, more than half of the patients who were part of the study, were unaware or knew very little about the disease; and the literature tells us that guidance and information about self-care are rare [10]. However, when asked if there was an interest in obtaining more knowledge and information, 84% of patients said yes.

Before starting radiotherapy, in a welcoming process as shown in Table 1, the health team is presented to patients who inform their respective functions and contributions to the progress of the treatment. However, patients report that the information absorption capacity offered by radiologists and health professionals is not effective, as it is more present at the beginning and almost always absent during treatment [19].

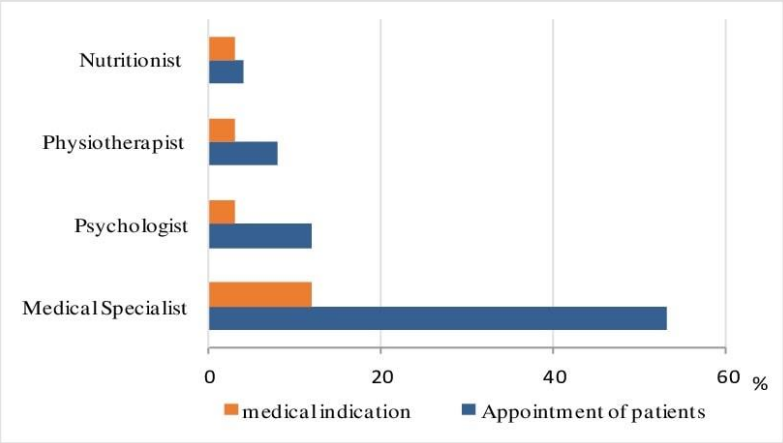
Table 1: Reception procedure by the radiotherapy service.

Professional	**Information and general guidelines**
Technologist radiology	• Procedures to optimize service by reception • Purpose of Hospital Dia • Purpose of the simulation to radiotherapy • Care for skin markings • The importance of monitoring minors and the elderly
Physical	• Device dosimetry (calibration) • Dose distribution • Participation in the production of attachments for exams
Nutritionist	• Importance in fluid intake • Importance of food fractionation • Adequate and inadequate food
Nursing	• Skin care (sun exposure) • Use of appropriate and inappropriate moisturizer • General care
Social Work	• Guidance on public transport • Guidance on locomotion service, when residing in other cities.

In prostatectomy and brachytherapy procedures, patients had more participation in the choice of treatment than in cases of radiotherapy. In this sector, it cannot be different, the patient feels stressed, psychologically shaken and impotent with decisions that can be taken, their immune system worsens and its recovery [20]. Although radiotherapy treatment is considered short, the attention of the health team must be careful, already preparing as implications for post-treatment and self-care [15].

Research has shown that there is some skepticism about the need for support for patients with prostate cancer. In the current survey, we found that 67% of patients need support from the health team during treatment; specialist doctor was the most indicated, followed the social service, psychology, physiotherapy, nursing and nutritionist (Figure 3).

Figure 3: *Correlation of information from medical records with questionnaires.*



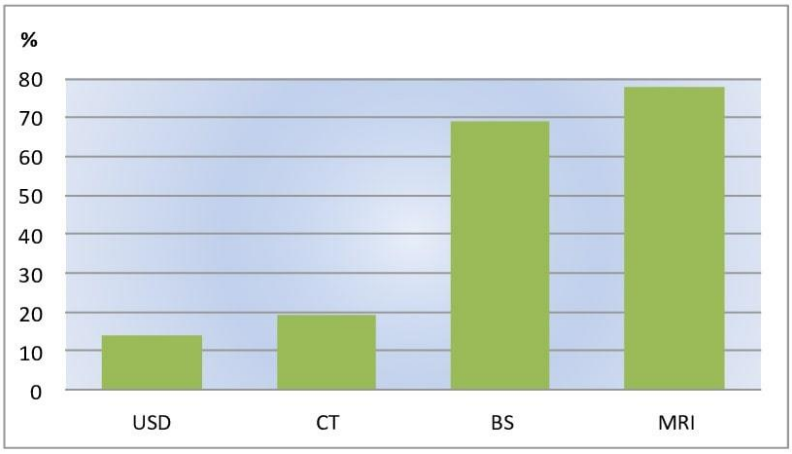
As most patients have little knowledge about the disease and the procedures adopted, it generates a lot of expectation and anguish, including for caregivers and family members, factors that make the services of some health professionals necessary during and after treatment [21]. In the present research, the index of indication for health professionals through medical records was lower than the needs observed through questionnaires carried out by patients, confirming the information shown in other scientific works, which patients do not always have access to the multi-professional team. This absence may occur due to the lack of synchronism between the doctor and the health team, or the non-prioritization of these sectors with therapeutic support [8,9].

Despite the main axis of the study, it was to analyze the patient's participation in the treatment and the professional support provided, understanding the main symptoms and the procedures adopted for the diagnosis, was extremely important for the development of the research, since these indices act directly in the choice adopted treatment.

As shown in Figure 4, magnetic resonance imaging was the most used image resource for mapping the disease, a data considered significant, as it is an important exam for the assessment of can-

cer staging and is a limited resource on the part of society; however it was not possible to measure the average waiting time for its realization.

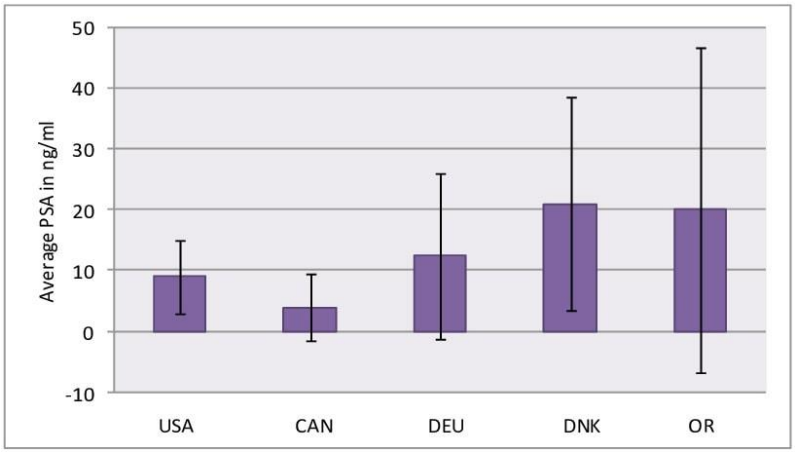
Figure 4: *Imaging used to prostate cancer diagnostic.*



Ultrasound (USD), Computed Tomography (CT), Bone Scintigraphy (BS), Magnetic Resonance Imaging (MRI).

The most widely used clinical examination in the world for the detection of prostate cancer is the Prostate Specific Antigen (PSA) [22]. As shown in Figure 5, the mean of the antigen observed in this study was not much different in relation to research carried out in other countries, but the standard deviation changed significantly. The explanation for the amplitude of the deviation is the values found during the research, which has a minimum value of 2.4 ng / ml and the maximum value above 100 ng / ml of the prostate antigen.

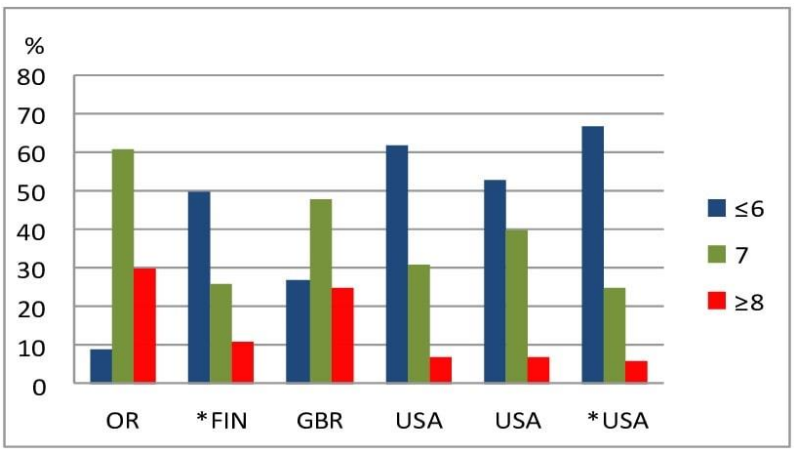
Figure 5: *Analysis of PSA observed in studies.*



United States of America (USA), Canada (CAN), Germany (DEU), Denmark (DNK), Observed in the Research (OR).

The Gleason Score, a fundamental tool in the analysis of prostate tissue through biopsy, was present in 99% of patients. The in Figure 6 is shown, that the result of score 6 and 7 found in the survey was not very different in relation to the other studies, since in relation to the Gleason Score equal to or greater than 8, which has a poor prognosis, the value found in the present study was worse in relation to the others countries that were part of the study. Recent statistics show that when prostate cancer is located, and the Gleason score is equal to or below seven, the mortality rate in that group over the next 15 years will be 0 to 2% [23].

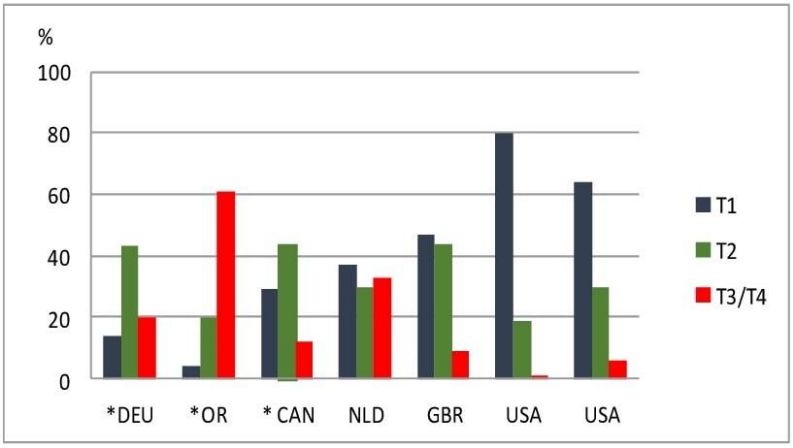
Figure 6: *Analysis of the Gleason score observed in the studies.*



Observed in the Research (OR), Finland (FIN), United Kingdom (GBR), United States of America (USA). * Uninformed: FIN=13%, USA=2%.

Regarding tumor staging, level 1 (T1) is considered the best prognosis for treatment and levels 3 and 4 (T3 / T4) are considered to have the worst prognosis for the patient [16]. The in figure 7 is shown that the average found in the present research, T1 was well below the values of countries like Germany, Canada, the Netherlands and the United Kingdom. In relation to T3 / T4, the average of our study was 61%, while the average for Germany, Canada, the Netherlands and the United Kingdom was 18.5%, and the USA was 3.5%.

Figure 7: *Analysis of Tumor Staging observed in the studies.*



Germany (DEU), Observed in the Research (OR), Canada (CAN), Netherlands (NLD), United Kingdom (GBR), United States of America (USA). * Uninformed: DEU=23%, OR=15% e CAN=15%.

More than half of the patients mentioned that they participated in the choice of the treatment performed; however, the data presented on other fronts allow us to reflect on this result. Of the patients who participated in the research, 65% reported having one or more chronic diseases and 61% the level of tumor staging was T3 / T4 how shown in figure before, which are considered to be at high risk. It is known that medical conduct is taken according to the disease and the general condition of the patient, and however much it seeks to include it in the procedures to be taken, the mentioned comorbidities act as limitations. Perhaps in this situation, what happens is more a justifica-

tion on the part of the medical team of the procedures to be taken, than even a choice itself. Currently in the USA 90% of the population has an early diagnosis of the disease, still in the localized phase, allowing 94% of these patients to have the possibility to choose the treatment to be followed [4, 23]

Urinary symptoms may be associated with prostate removal (prostatectomy) or radiation therapy, especially when accompanied by Androgen Deprivation Therapy (ADT) [24-26]. Of the patients referred for radiotherapy treatment (Table 2), 29% already had urinary incontinence and the symptom remained above 50% during and at the end of the treatment, other symptoms manifested during the treatment but returned to previous levels at the end of the treatment. Studies show that physiotherapy to strengthen the pelvic floor and educational health, relieves discomfort and urinary incontinence [27, 28].

Table 2: Urinary symptom associated with radiotherapy treatment.

Total number of patients: 147		**Radiotherapy treatment**					
Total	**Urinary Symptom**	**Before**		**During**		**Termination**	
n - %		yes %	no%	yes%	no%	yes%	no%
42 - 29	Urinary incontinence	62	38	57	43	57	43
33 - 22	Urinary Urgency	39	61	61	39	24	76
99 - 67	Dysuria	20	80	85	15	30	70
06 - 04	Hematuria	33	67	83	17	33	67
37 - 25	Polaciuria	24	76	81	19	16	84
10 - 07	Strangeness	60	40	70	30	20	80
86 - 59	Nocturia	42	58	86	14	23	77

As can be seen in (Table 3), before starting treatment, most of the patients involved in the present study did not have or had mild digestive discomfort; however, symptoms increased during treatment, remaining until hospital discharge.

Table 3: Digestive symptom associated with radiotherapy treatment.

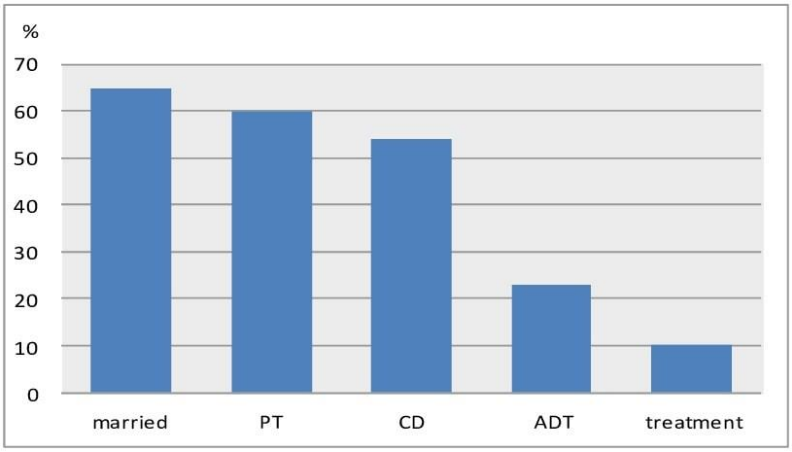
Total number of patients: 147		**Radiotherapy treatment**					
Total	**Digestive Symptom**	**Before**		**During**		**Termination**	
n -%		yes %	no%	yes%	no%	yes%	no%
19 - 13	Constipated	11	89	95	5	68	32
24 - 16	Tenesmus	42	58	92	8	6	94
35 -24	Diarrhea	00	100	97	3	34	66
10 - 7	Hematochezia	00	100	90	10	20	80

Radiotherapy has short medium-term impact on intestinal function; however, these disorders can also occur at the long term and even persist for years [5]. Disturbance of the digestive tract such as: diarrhea, colic, pain when evacuating and among others can be decreased, therefore, it is necessary to avoid fried foods, eat small portions during the day, chew the food well, drink water properly, give preference to cold liquids or warm and avoid hot and icy [29]. Recent studies have pointed out that physical exercise at least twice for week also acts to reduce digestive symptoms presented by patients during radiotherapy sessions [30].

The sexual function in men is directly linked to their virility, and is responsible for their self-esteem, its absence leads to marital conflicts, and in 10% of cases the separation of couples. Studies have also shown that erectile dysfunction promotes emotional decline, with the erosion of interpersonal, professional and financial relationships, leading in most cases to isolation [31,32].

As shown in Figure 8, 65% of the patients with sexual alterations were married, and studies show that in most cases, the partner is directly involved in the patient's emotional issues, so it is important to include them in support groups, which allows her to share her experiences and at the same time be encouraged to deal with such challenging issues [33].

Figure 8: *Profile of patients with manifestation of sexual disorder.*



PT=Prostatectomy, CD=Chronic Disease, ADT=Androgen Deprivation Therapy.

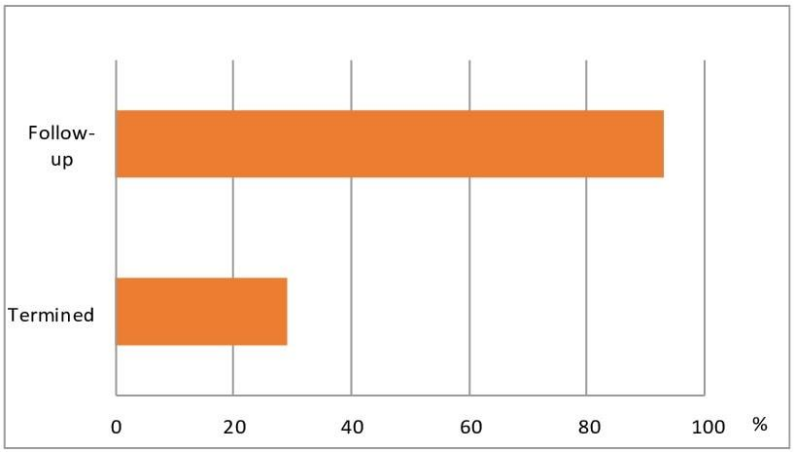
Research shows that currently, there are treatments for erectile disorder; however it is important that the patient has knowledge of the subject previously and is referred to specialized support groups, this way the chance of success will be greater [34]. However, in the figure before research

is shown that only 10% of the total of patients who declared to have any sexual disorder, were undergone any type of treatment, studies show that well-being and quality of life, are directly associated with the sexual function of the patient [7].

Exercises during and after radiotherapy have been shown to be an important ally in the reduction of agents found in the blood, responsible for contributing to the inflammatory response "radiation toxicities" [35]. At the long term, resistance exercise has provided strength stability, muscle gain and triglycerides, body fat, PSA levels decreased [36], physical activity it also acts in changing the cancer biomarkers and decreases the risk of recurrence of the disease [37].

In the present research it is shown through Figure 9, that 10% of the total of patients had some degree of muscle weakness during radiotherapy; however, there is no record in the medical records, referral to specialized professionals.

Figure 9: *Percentage of decreased muscle strength during radiotherapy*.



The research had aspects that contributed to understand the functioning of the public service. The aspects that limited the study were: number of participants and absence of information considered important for the research.

It highlights the importance of future research on the level of professional support after the end of the radiotherapy service, since many of the symptoms remain for several months or even years.

4. RECOMMENDATIONS

The present study has shown that the interaction of the patient with prostate cancer together with the health team is not the most ideal, so we recommend to the radiotherapy sector, that this monitoring takes place in a structured way and synchronized between the patient and the team professional. It is essential that the main symptoms observed in the treatment have specific guidelines and that the patient knows how to act and which professional to look for in each circumstance. If the specialist is not part of the sector, it is essential to create mechanisms for monitoring, not only at the beginning, but during the sessions and after the end of radiotherapy. It is also important that therapeutic support is extended to family and caregivers through: support groups, educational health, newsletters and means of communication. The radiotherapy sector is seen not only as a treatment center, but also as an important articulator for the well-being and the reinsertion of the patient in the social environment.

5. CONCLUSION

It is difficult to insert support and humanization policies for patients with prostate cancer after diagnosis and during treatment. Through reports and data collected from medical records, it can be seen that many of the symptoms and difficulties mentioned during treatment, could be alleviated if there was a closer relationship between the health team, patient and family; decreasing the length of hospital stay and complications due to radiation side effects

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