



CURSO DE ODONTOLOGIA

JILDEVAN DIAS RODRIGUES DA COSTA

**ADHERENCE OF HEAD AND NECK CANCER PATIENTS
TO LASER PHOTOBIMODULATION FOR ORAL
MUCOSITIS MANAGEMENT IN A PUBLIC HEALTH
SERVICE: a pilot study**

SALVADOR

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MUCOSITIS MANAGEMENT IN A PUBLIC HEALTH
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Artigo apresentado ao Curso de Odontologia da Escola Bahiana de Medicina e Saúde Pública como requisito parcial para obtenção do título de Cirurgião-Dentista.

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DEDICATÓRIA

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ABSTRACT

Objective: Evaluate the adherence of patients with head and neck cancer who underwent radiotherapy or radio-chemotherapy combined to the preventive laser photo-biomodulation protocol in a public health service. **Methods:** Thirty head and neck cancer patients undergoing cancer treatment, which were examined and interviewed through a record of signs and symptoms of oral mucositis (OM) and adherence to the preventive laser protocol that began in the first session of radiotherapy, and included the laser application three times a week during a 3-week period. The collected data were documented, and the descriptive and inferential statistics were performed with a significance level of $p < 0.05$. **Results:** It was observed that 66.6% of patients developed OM. There was a predominance of degrees I and II, with 36.8% and 31.6%, respectively. A total of eleven patients (36.3%) missed one or more laser photo-biomodulation sessions. A positive association was found between patients who missed at least four laser photo-biomodulation sessions with the development of OM degrees III ($p < 0.05$). **Conclusion:** The adherence of patients with head and neck cancer to the laser photo-biomodulation protocol was great and the development of more severe degrees of OM was related to individuals not attending scheduled sessions.

Keywords: Mucositis. Head and Neck Cancer. Radiotherapy. Chemotherapy. Laser therapy. Photo-biomodulation.

1.INTRODUCTION

Head and neck cancer generally include neoplasms that anatomically affect the nasal sinus, larynx, pharynx, face, salivary glands, and oral cavity. About 40% of head and neck cancers occur in the oral cavity, 15% in the pharynx, 25% in the larynx, and the remainder in the remaining remnant sites such as salivary and thyroid glands, among others (Colombo & Rahal, 2009). Head and neck cancer are responsible for a high number of death worldwide whereas is the sixth leading cause of cancer death (Ribeiro, Medeiros, Rodrigues, Valena, & Lima, 2015). Over five hundred thousand new cases are diagnosed by year in the whole countries.. Thus, - dentists play a very important role in earlier diagnosing oral cancer once they are who have close contact with anatomic area (Guo et al., 2019; Torre et al., 2015) as well as they are extremely important throughout such cancers' treatment too.

The development of oral mucositis (OM), xerostomia, candidiasis, radiation caries, trismus, dysgeusia and osteoradionecrosis is common in patients with head and neck cancer undergoing radiotherapy. Such changes might appear early or late, in a reversible or irreversible way. Although radiotherapy is a local treatment method, it is often indicated in association with chemotherapy (Frowen, Hughes, & Skeat, 2019; Sari, Nasiloski, & Gomes, 2014).

As a matter of fact, the therapeutic modalities adopted for the treatment of cancer patients are complex and involve several medical specialties. Chemotherapy treatment includes use of drugs which control tumor growth by destroying malignant cells and preventing the formation of new DNA (Almeida, Leitão, Reina, Montanari, & Donnici, 2005). It blocks essential functions of neoplastic cells and often induces their apoptosis too. Therefore, since it is a systemic treatment, it might trigger the occurrence of signs

and symptoms in the oral cavity due to its adverse effects widely reported in the literature (Epstein et al., 2012; Oliveira & Aires, 2018).

Oral complications resulting from antineoplastic treatment take place in patients with head and neck malignant neoplasms and are related to dose, tissue type and seepage of radiation, as well as patient's responses (Ahadian, Yassaei, Bouzarjomehri, Targhi, & Kheirollahi, 2017; Oliveira & Aires, 2018). For instance, it has been reported that salivary gland hypofunction and xerostomia in individuals undertaken to head and neck radiotherapy protocol are dose dependent. Dysgeusia, dysphagia, OM and candidiasis have been described as deleterious effects of pharmacological and radiation therapy in patients with head and neck cancer. Radiotherapy and/or induced chemotherapy OM present erythema, ulceration and edema, often accompanied by pain (Kaae, Johnsen, Hansen, Kristensen, Brink, & Eriksen 2019; Oliveira & Aires, 2018).

OM is one of the most common oral complications in patients who are in cancer treatment (Lalla et al., 2014). Usually, OM appears in the second week of treatment (Wang & Jia, 2019). Such clinical condition has been considered the main cause of oral pain in patients with head and neck cancer and may compromise the whole patient's health, since it affects speech, swallowing, chewing, and also impairs their nutrition. Patients may require feeding through a nasogastric tube or gastrostomy (Cicchelli et al., 2017; Vera-Llonch, Oster, Hagiwara, Sonis, 2006).

Laser photo biomodulation has been used for prevention and treatment of OM once many authors have reported the clinical improvement of patients with such condition. Antunes et al. (2007) and Oton-Leite et al. (2015), reported a reduction in OM's remission time and severity in a group of patients undergoing photo biomodulation. Then, authors concluded that this therapeutic modality was effective in the clinical management of severe OM. Regarding a meta-analysis study, Oberoi et al. (2014), found that prophylactic laser photo biomodulation was useful in decreasing severity and pain of

OM in patients with head and neck cancer and bone marrow transplanted recipients. Laser photo biomodulation stimulates the release of β -endorphin and promotes tissue biomodulation to accelerate the tissue repair process (Freitas & Hamblin, 2016; Navratil & Dylevsky, 1997). According to Figueiredo, Lins, Cattonya, & Falcão (2013) and Oton-Leite et al. (2012), a treatment of phototherapy seems to be well tolerated by patients and has been proven as a safe and efficient alternative for preventing and treating OM.

In particular, in patients with head and neck cancer undergoing radiotherapy, the laser care protocol is usually linked to the days of the patient's attendance at the radiotherapy service. Laser photo biomodulation may be daily or every other day applied. It is not difficult to obtain commitment of these individuals regarding this modality of treatment (Magnabosco & Westphalen, 2013) while it is very common for them to report absences to laser photo biomodulation sessions. But, it is not documented yet why it happens. Such reasons might be forgetfulness, disbelief in the efficacy of this therapeutic modality or even antineoplastic therapy's side effects which commonly weaken patients causing even more significant systemic repercussions than OM development.

Therefore, the goal of this pilot study was to evaluate the adherence of patients with head and neck cancer who underwent radiotherapy with or without chemotherapy to the preventive and/or curative laser photo biomodulation protocol in a public health service. Additionally, it aimed to find out the main causes of non-adherence to laser photo biomodulation as well as oral mucositis occurrence in the studied population.

2. METHODS

This project was submitted and approved by the Human Ethics Committee with CAAE no. 25512714.6.0000.5544. All patients were known about the treatment proposal and purpose, as well as the possible risks and benefits of the study. Then, they signed the Informed Consent Form (ICF), which stated that they understood such research' purpose and the proposed treatment, following the criteria of resolution 466/12 of the National Health Council. Procedures are in accordance with the 1975 Declaration of Helsinki, as revised in 2000.

Study Population and Oncology treatment

This was a cross-sectional study (não seria longitudinal?) whose population sample included patients with malignant head and neck neoplasms who had not yet started cancer treatment (surgery, radiotherapy and chemotherapy), through free demand from the Sister Dulce's Social Works (SDSW). The radiotherapy protocol consisted in five weekly sessions, with daily dose of 2 Gy and a minimum dose of 48 Gy, along a total dose ranging from 60 to 70 Gy was administered for all of patients. The chemotherapy protocol involved the cytotoxic drugs to oral cavity every 21 days. Before starting oncology treatment, all patients underwent oral examinations and panoramic radiography. Those who required oral care underwent dental treatment before beginning radio or radio-chemotherapy along with a rigorous orientation regarding oral hygiene of minimum brushing twice a day with soft toothbrush and dental floss.

Inclusion Criteria

The study included individuals with head and neck malignant tumors who had not initiated the proposed treatment protocol (radiation or radio and chemotherapy combined), aging at least 18 years old at the beginning of the study and who had previous staging and tumor degree in their medical records, provided by the institution of origin. Among patients who have been administered cytotoxic chemotherapy associated with radiation, it was included in this study only those administered capecitabine, carboplatin, cyclophosphamide, cisplatin, docetaxel, doxorubicin, fluorouracil, oxaliplatin, or paclitaxel.

Exclusion Criteria

Patients showing any systemic disease that could interfere in the tissue repair, like diabetes mellitus and autoimmune diseases were excluded from this study. Additionally, it was also excluded from this work patients who had started radiotherapy in the head and neck region, but did not perform the proposed dental treatment by the dental team.

Study Design

Through an agreement signed with the responsible for that institution, data were collected regarding the type of cancer, its graduation, staging, patient's proposed treatment, dose, and number of sessions. To draw the sociodemographic profile of population, a questionnaire was completed by which every information related to age and gender was recorded.

A preventive laser photo-biomodulation protocol was performed after first session of radiotherapy or radio-chemotherapy combined, and the following sessions took place in alternative days (Monday, Wednesday and Friday), every week just before each radiation process. For monitoring OM's development, intraoral physical examination was conducted every 48 hours by five experienced and calibrated evaluators, between

completed radiotherapy sessions. Once first lesion has appeared and related, it was applied the scouting scale of mucositis according to the World Health Organization (WHO, 1979). This scale assesses the signs, symptoms, and functional disorders, such as erythema and oral ulcers, besides being world widely accepted scale that is quick and easy to apply. The findings were reported in the individual clinical record of each patient and they continued to be attended by the Dental Service for Photo-biomodulation Laser Therapy.

Laser photo-biomodulation handled in that work was a semiconductor diode, gallium aluminum arsenide laser device (AsGaAl), Twin Flex® (MM Optics, São Carlos, Brazil), maximum output tip of 86.7 mW, device's active tip area of 0.1256 cm², wavelength of 660 nm, which was applied at specific and equidistant points throughout the oral mucosa. Dosimetry adopted at each application point is described in the literature (2J / cm²), across a period of 10 seconds (Zecha et al., 2015). Preventive laser photo-biomodulation was performed at the same first session day of radiotherapy with or without chemotherapy, with a total dose of 56J distributed in 28 equidistant points in the oral cavity, excluding the tumor site. The laser was applied to the lips (3 points each), hard and soft palate (3 points each), right and left jugal mucosa (3 points each), buccal floor (1 point), lateral tongue edge (3 points) and back of the tongue (6 points). Laser radiation shielding glasses were used by both professional and patient, according to the manufacturer's recommendation. Patients did spontaneously show three times a week, every other day, over a minimum period of three weeks.

For data collection and analysis, Microsoft Excel software was applied to develop a spreadsheet, built specifically for the study. Regarding qualitative variables (gender, origin, medical and dental history, and frequency of attendance at photo-biomodulator therapy sessions), data were obtained from a one-dimensional frequency table, from which their respective percentages were identified. Pearson's Chi-Square and Fisher's

exact tests were used (Epi InfoTM 7.2 version, 2019). The significance level standardized for this study was $p < 0.05$.

3. RESULTS

Table 1 illustrates the sociodemographic characteristics of the patients who participated of research. The average age was approximately fifty-six years and there was a higher percentage of males (76.7%). To regard the most frequent cancer location, it was the oropharynx (56.7%), followed by larynx (26.7%) and oral cavity (13.3%). About 58% of the tumors were classified as T3 and T4 and the highest percentage of lymph node involvement revealed degrees N1 and N2 (41.4%). Most patients did not exhibit distant metastasis (M0 = 72.4%).

In addition, the use of nasogastric tube was present in 16.7% of the sample. Nineteen patients (63.3%) developed OM while, seven of them (36.8%) had degree I and six had degrees II and III, respectively 31.6%.

Regarding patients' adherence to the laser photo-biomodulation protocol, it was found that out of thirty patients, eleven (36.6%) did not miss any treatment session, four (36.3%) were not present at only one session, three (27.4%) did not attend to two or three sessions and lastly, four of them (36.3%) skipped four or more visits. Table 2 shows the record of OM development in the sample. Therefore, only patients who missed four or even more laser photo-biomodulation sessions developed OM degree III ($p < 0.05$); (Table 2).

Searching for reasons why patients did not attend to laser treatment protocol, it was found that the three most commonly reported reasons were the occurrence of technical problems in the radiotherapy service (12%), the lack of patience to wait for dentist care (25%) and systemic complications resulting from cancer treatment (45%). From eleven patients who missed at least one laser photo-biomodulation session, eight of them (72.7%) attributed such absence to psychological problems, mainly depression.

4. DISCUSSION

The aim of this study was to evaluate the adherence of patients with head and neck cancer, submitted to radiotherapy with or without chemotherapy for preventive protocol of laser photo-biomodulation in a public health service. Also, to identify the possible causes of noncompliance with laser photo-biomodulation as well as the occurrence of OM in the researched population. The reasons for non-adherence to photo-biomodulation treatment were problems in the radiotherapy service, the lack of patience to wait for dentist care, psychological problems (fatigue and depression) as well as complications resulting from cancer treatment.

Findings demonstrate that patients with head and neck cancer who have adhered to preventive or curative treatment for OM with laser photo-biomodulation are, in average, greater than fifty-five years old. This age group is in line with the literature, which noticed a higher prevalence of head and neck cancer between the forties and fifties (Morais et al., 2020). Some studies have reported lower incidence of OM in female patients since most patients who undergo laser treatment are male (Morais et al., 2020; Mari'n-Conde et al., 2018). In this study, men represented 76.7% of the total patients. Plus, other researchers also observed in their studies that male represented greater than 75% (Antunes et al., 2007; Legouté et al., 2019; Morais et al., 2020; Mari'n-Conde et al., 2018; Oton-Leite et al., 2015; Palma et al., 2017).

In regard to the most frequent location of cancer, Morais et al. (2020) and Oton-Leite et al. (2015), reported higher occurrence of cancer in the oral cavity whereas Palma et al. (2017), reported a higher occurrence in the pharynx. In the present research, the oropharynx had highest incidence (56.7%) as reported by Antunes et al. (2007), Mari'n-Conde et al. (2018), Legouté et al. (2019).

According to the literature, the most common tumor sizes classification is T3 and T4 and the degree of lymph node involvement, N1 and N2 (Antunes et al., 2007; Morais et al., 2020). By the other hand,, in their study Oton-Leite et al. (2015), evaluated that the highest percentage of lymph node involvement occurred in N2 and N3 degrees . Many factors may determine the late staging of malignant neoplasms including head and neck cancer, and these apparently controversial results support the hypothesis that each oncology service is unique and has peculiarities regarding the waiting time for care and the interdisciplinary and multi-professional approach of its users. Respecting to this work, a higher percentage of lymph node involvement was observed in N1 and N2, which both together represented about 76% of the sample.

Laser photo-biomodulation has been reported to reduce the severity of OM resulting from antineoplastic treatment, most likely due to the anti-inflammatory and analgesic effect of laser irradiation on injured tissue, obtained through increased vascularization and tissue repair (Oton-Leite et al., 2015; Pandeshwar et al., 2015). Patients undergoing photo-biomodulation experience rapid pain relief and it allows them to improve their nutritional pattern and thus have a more encouraging overall health status (Florentino, Macedo, David, Carvalho, & Guedes 2015; Bjordal et al., 2011). Among thirty patients included in the present study, eleven of them did not develop OM and nineteen developed to different degrees. Some authors have shown that preventive laser use can reduce the occurrence and/or severity of OM (Bjordal et al., 2011; Campos, Simões, Nogueira, Eduardo, 2009; Oton-Leite et al., 2012). This study shows that use of preventive laser photo-biomodulation proved to be satisfactory since only six patients (31.6%) had clinical progression of OM to degree III and no one of them evolved to degree IV. It is also known that the management of OM degree I and II involve a less complex approach that encompasses the continuity of laser photo-biomodulation associated with the use of mouthwashes such as chamomile tea, dexametasone elixir,

among others (Abramoff et al., 2008; Antunes et al., 2007; Cowen et al., 1997; Magnabosco & Westphalen, 2013).

At the same time, the present study demonstrated that the degree of severity of OM was significantly related to the study participants' absence record at preventive laser photo-biomodulation sessions since only patients who missed more than four sessions developed degree III OM ($p < 0.05$). There are no scientific studies that investigated the adherence of this specific population to the preventive laser photo-biomodulation protocol. This data assumes great relevance because it values the use of this therapeutic modality in the care of patients with head and neck cancer undertaken to radiotherapy with or without chemotherapy. Probably, this relationship has not yet been explored because it is expected that these individuals will normally attend to radiotherapy in the highly complex units of Oncology, once this treatment implies daily doses of radiation offered to the neoplasia.

Oral mucositis treatment has supportive and palliative characteristics relieving symptoms besides avoiding other complications such as dehydration and infections. There is no consensus about the best appropriate treatment, but commonly non-irritating diets and oral hygiene products, oral antiseptics, topical anesthetics, laser photo-biomodulation and opioid analgesics has been prescribed to relieve symptoms (Hong et al., 2019; Lalla et al., 2014; Ranna et al., 2019). Additionally, there is no defined protocol for preventive and/or curative using laser photo-biomodulation although most of applied protocols so far having different beginning and ending time of their application, wavelength, energy density, equipment power, optic fiber area and frequency, report success of that intervention (Magnabosco & Westphalen, 2013).

Laser photo-biomodulation acts as the main tool regarding management of OM through its pain control properties and stimulation of the healing process, promoting excellent comfort and quality of life for patients (Oberoi, Netto, Beyene, Treister, & Sung,

2014; Relom et al., 2017). Laser application is a noninvasive technique that seems to promote reduction of mucositis severity, so, for such reason, patients have a wide acceptance for that therapy, even younger ones (Oberoi et al., 2014). In this study, only eleven patients missed laser photo-biomodulation sessions, indicating good adherence to treatment. Specifically, in respect to those who developed a severe degree of OM (degree III) and only patients who missed 4 or more sessions, it happened to patients who missed at least four treatment sessions. Such data help us to prove the effectiveness of laser photo-biomodulation in the treatment of OM. Discussing about the possible reasons for adherence to photo-biomodulation in the experiment, it can be mentioned ~~the fact that~~ the characteristic of weekly control by the dental team associated with the beneficial effects of the laser, combined to analgesia and accelerated healing process (Oberoi, Netto, Beyene, Treister, & Sung, 2014).

Despite the number of absences, eight patients did not justified, then, there was no complete withdrawal from treatment. Some different reasons may be given to justify the poor adherence to any kind of treatment, especially whether it is secondary treatment, necessary to address the consequences of primary treatment. Other acceptable reasons may be fatigue, psychological problems like as depression, and economical circumstances. It is worthy to mention that those patients usually have low self-esteem and physical weakness beyond socioeconomic aspects that may also compromise treatment attendance or even cause their leaving off.

Even though care taken in the design of the present study, it was reported some difficulties throughout that research. Despite preventive measures have been taken, the treatment has become patients weakened as long as there was a large loss of individuals, either by treatment discontinuation default other personal reasons. Additional studies including larger population samples are necessary to determine the reasons of no

adherence of head and neck cancer patients to laser photo-biomodulation in a public health service.

5.CONCLUSION

In the present investigation, it was concluded that adherence of patients with head and neck cancer to the curative and/or preventive protocol of laser photo-biomodulation was large, and that development of more worst degrees of oral mucositis were related to the individuals' attendance to the scheduled sessions. Finally, the main reasons reported for absences throughout treatment were occurrence of technical problems in the radiotherapy service, the lack of patience to wait for care and systemic complications resulting from cancer treatment.

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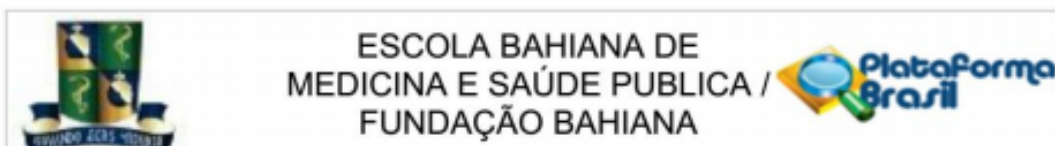
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ANEXO 1 – Protocolo de Aprovação do Comitê de Ética



PARECER CONSUBSTANCIADO DO CEP

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: Avaliação do efeito da fotobiomodulação laser 670nm em pacientes oncológicos portadores de mucosite oral usuários do Sistema Único de Saúde (SUS)

Pesquisador: Alena Ribeiro Alves Peixoto Medrado

Área Temática:

Versão: 4

CAAE: 25512714.6.0000.5544

Instituição Proponente: Fundação Bahiana para Desenvolvimento das Ciências

Patrocinador Principal: Financiamento Próprio

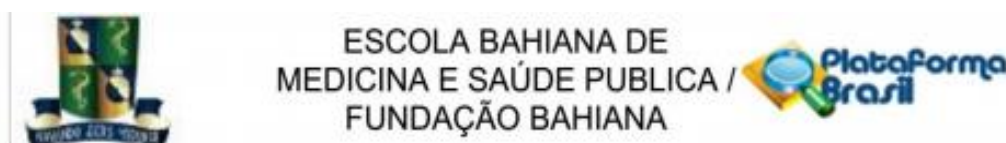
DADOS DO PARECER

Número do Parecer: 746.416

Data da Relatoria: 12/06/2014

Apresentação do Projeto:

O câncer é considerado uma doença genética, na qual os genes que sofreram mutações por motivos físicos ou químicos modificam a função biológica natural. Os métodos mais eficazes para a destruição de células tumorais ainda são a quimioterapia e a radioterapia, porém, seus efeitos colaterais, na maioria das vezes, interferem na qualidade de vida dos pacientes. Dentre as diversas complicações envolvidas no tratamento antineoplásico, a mucosite oral é uma das complicações mais comuns. Por se tratar de um processo inflamatório que acomete a mucosa oral e estar associada a quadros de desconforto e dor, é importante tentar devolver a este paciente o alívio e o bem-estar. O laser é uma forma de radiação não ionizante e com alta concentração, não invasivo e bem tolerado pelo organismo. É considerado um tratamento terapêutico já que, aplicado sobre o tecido, aumenta a sua migração e proliferação celular, favorecendo a cicatrização, aumentando a vascularização e formando tecido de granulação em abundância. Portanto, o objetivo desta pesquisa é avaliar o efeito da fotobiomodulação laser em 120 pacientes submetidos ao tratamento quimio e/ou radioterápico usuários do Sistema Único de Saúde. Projeto submetido em 05 de fevereiro de 2014.



Continuação do Parecer: 746.416

haverá custo de esterilização de material, bem como honorários do fonoaudiólogo; "Não haverá custo de esterilização nem do tratamento fonoaudiológico. A esterilização será realizada nas dependências do campus Cabula da Escola Bahiana de Medicina e Saúde Pública e os profissionais da fonoaudiologia serão voluntários na pesquisa e sua participação será através de aplicação de questionários".

9. Informa no TCLE que o tratamento com laser é seguro e apresenta como benefícios diretos o fato de que: "Este tipo de tratamento é capaz de diminuir a dor e fazer as feridas cicatrizarem mais rápido".

10. Anexa os instrumentos de coleta de dados que atendam aos objetivos propostos na pesquisa, tais como: 'Escala de dor'; 'ficha de pesquisa de exame periodontal'; 'fichas de sintomas e sinais'; 'questionário de qualidade de vida da Universidade de Washington - UWQOL'; 'Questionário de qualidade de vida em deglutição – SWAL –QOL', além de modelo de planilha de dados.

11. Informa no TCLE que: "A fim de garantir a sua privacidade o seu nome, suas fotografias e suas informações pessoais não serão revelados, a não ser que o (a) senhor (a) queira fazer isso. Ao final da pesquisa, todos os seus registros serão destruídos."

12. Esclarece no projeto, bem como no TCLE como será realizada a randomização dos grupos.

Após a análise das pendências listadas anteriormente pelo CEP - EBMSP o protocolo de pesquisa foi considerado aprovado.

Situação do Parecer:

Aprovado

Necessita Apreciação da CONEP:

Não

Considerações Finais a critério do CEP:

Atenção : o não cumprimento à Res. 466/12 do CNS abaixo transcrita implicará na impossibilidade de avaliação de novos projetos deste pesquisador. Tendo sido sanadas as pendências anteriormente assinaladas e, estando de acordo com a Res. 466/12 do CNS o projeto encontra-se exequível.

XI ζ DO PESQUISADOR RESPONSÁVEL

XI.1 - A responsabilidade do pesquisador é indelegável e indeclinável e compreende os aspectos éticos e legais.

XI.2 - Cabe ao pesquisador: a) e b) (...)

ANEXO 2 – Tabelas

Table 1. Sociodemographic characteristics of patients with head and neck cancer. Assistance Works Sister Dulce, Salvador, Bahia, Brazil, 2019.

Variables	n=30	%
Age	55,97±3,5	11,01
Gender		
Male	23	76,7
Female	7	23,3
Location		
Oropharyngeal	17	56,7
Laryngeal	8	26,7
Oral cavity	4	13,3
Thyroid	1	3,3
Staging		
Size		
T1-T2	5	17,2
T3-T4	17	58,6
TX	7	24,1
Lymph Nodes		
N0	10	34,5
N1-N2	12	41,4
N3	3	10,3
	4	13,8
Metastases		
M0	21	72,4
MX	8	27,6
Nasogastric tube		
Yes	5	16,7
No	25	83,3
Mucositis degree		
I	7	36,8
II	6	31,6
III	6	31,6
Laser photo-biomodulation		
Preventive / Curative	6	20,0

Preventive	24	80,0
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Table 2 Evaluation of the degree of OM related to the absence of laser photobiomodulation sessions. Assistance Works Sister Dulce, Salvador, Bahia, Brazil, 2019.

	Oral Mucositis					
	Degree I		Degree II		Degree III	
	n	%	N	%	n	%
No. of sessions						
One	1	25,0	2	50,0	1	16,7
2 to 4	1	33,3	-	-	2	33,3
Over 4	-	-	1	25,0	3*	50,0
No record of Absence	5	41,7	3	50,0	-	-

Statistical Fisher exact test and chi-square * $p < 0.05$

ANEXO 3 – Normas da Revista

Normas da Revista

BMC Cancer (revista)

Resumo

O resumo não deve exceder 350 palavras.

Fonte Times New

Tamanho 12.

Palavras-chave

Três a dez palavras-chave representando o conteúdo principal do artigo.

Texto

Use espaçamento de linha duplo

Incluir numeração de linha e página

Não use quebras de página em seu manuscrito

Para editores e revisores avaliarem com precisão o trabalho apresentado em seu manuscrito, você precisa garantir que o idioma inglês seja de qualidade suficiente para ser entendido

- As tabelas devem ser numeradas e citadas no texto em seqüência, usando algarismos arábicos (por exemplo, Tabela 1, Tabela 2, etc.).

- Tabelas com menos de uma página A4 ou Carta podem ser colocadas no local apropriado dentro do manuscrito.
- Tabelas com mais de uma página A4 ou Carta podem ser colocadas no final do arquivo de texto do documento. Cite e indique onde a tabela deve aparecer no local relevante no arquivo de texto para que a tabela possa ser adicionada no local correto durante a produção.
- Conjuntos de dados maiores ou tabelas muito grandes para a página paisagem A4 ou Letter podem ser carregados como arquivos adicionais. Por favor, veja abaixo para mais informações.
- Os dados tabulares fornecidos como arquivos adicionais podem ser carregados como uma planilha do Excel (.xls) ou valores separados por vírgula (.csv). Por favor, use as extensões de arquivo padrão.
- Os títulos das tabelas (no máximo 15 palavras) devem ser incluídos acima da tabela e as legendas (no máximo 300 palavras) devem ser incluídas embaixo da tabela.
- As tabelas não devem ser incorporadas como figuras ou arquivos de planilha, mas devem ser formatadas usando a função 'Objeto de tabela' no seu programa de processamento de texto.
- Cor e sombreamento não podem ser usados. Partes da tabela podem ser destacadas usando sobrescrito, numeração, letras, símbolos ou texto em negrito, cujo significado deve ser explicado em uma legenda da tabela.
- Vírgulas não devem ser usadas para indicar valores numéricos

ANEXO 3 – Artigos Referenciados Os artigos referenciados foram encaminhados para a banca examinadora anexados ao e-mail.