

# QUALITY OF LIFE FOR POST-RADIATION CERVICAL CANCER PATIENTS

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## Abstract

**Objective:** To determine the quality of life of cervical cancer patients after radiation.

**Method:** This research is an analytic study with a descriptive approach where data collection is conducted prospectively. All study participants included in this study were obtained from questionnaires given to cervical cancer patients after radiation at the hospital concerned. Existing data will be recorded by researchers and then processed data. This research was conducted with the approval of the Ethics Committee of the Faculty of Medicine, University of North Sumatra. The analysis in this study is a univariate analysis to look for patient characteristics and an analysis is performed to find the frequency distribution of patients in this study. Data were analyzed using the chi square method and fisher exact test if the data did not meet the requirements. This study uses a 95% confidence index with a P value <0.05 considered significant.

**Results:** The majority of patients in this study had age over 45 years of age 23 (82.14%), with the majority of patients with stage IIIB of 16 (57.14%), found from the most histopathological results were scuamos cell carcinoma 23 (82.14 %) and have received therapy with complete response in 28 (100%) patients. Based on the research it was found that after receiving radiotherapy, the functional scale score of the patient was  $483.37 \pm 34.75$ , the scale of symptoms was  $81.21 \pm 120.90$ , the global life score was  $89.04 \pm 22.95$ . From the results above obtained a quality of life score of  $653.00 \pm 178.10$  with an interpretation of the quality of life of patients is moderate. The chichi-square test results showed that there were no significant differences in global status (QOL) based on the type of therapy given, with p-value = 0.76 (p-value > 0.05).

**Conclusion:** The quality of life of cervical cancer patients after radiation at Medan Haji Adam Malik Hospital is moderate. There is no significant difference in global status (QOL) based on the type of therapy given to cervical cancer patients

**Keywords:** EORTC QLQ C-30, QOL, Cervical cancer, Quality of life, Radiotherapy.

## INTRODUCTION

Cervical cancer is a major public health problem in many developing countries Globally in 2018, cervical cancer ranks fourth as a type of cancer that often occurs in women. Treatment with radiotherapy is proven to improve the survival of cervical cancer patients for advanced stages. But radiotherapy treatment has many side effects. These side effects can affect the quality of life of patients. This is as stated by Mason et al. that patients who receive radiotherapy have significant side effects that interfere with treatment and affect quality of life. Assessment of the quality of life of cervical cancer patients can use several modalities including the EORTC QLQ C-30 questionnaire which has already conducted research on validity and reliability testing in Indonesia and the more specific EORTC QLQ-CX24, but there is no research on validity and reliability testing in Indonesia.<sup>1, 2, 3</sup>

## MATERIAL AND METHODS

This is a research analytic with a descriptive approach where data were taken prospectively. This study aims to describe the quality of life of post-radiation cervical cancer patients in Haji Adam Malik General Hospital, Radiotherapy Department has been carried out and serving patients with EBRT and brachitherapy since 2014, but since 2018 brachitherapy can not be used anymore so some patients were given EBRT booster and other patients referred to Murni Teguh Memorial Hospital. The study sample was post-radiation cervical cancer patients at the General Hospital. H. Adam Malik Medan, which existed during the study period, which was on September 25 to October 7, 2019, which met the inclusion criteria of 28 people (Std IIB-IVa, treated with 80-90Gy<sup>8</sup>, aged  $\leq 70$  yo, no other disease, no pregnancy and complete respond) the sample collection was done by collecting patients who came in poly oncology.

The collection tools that will be used in this study are the patient's health status sheet, quality of life questionnaire. Quality of life for cervical cancer patients was assessed using the EORTC QLQ C-30 questionnaire. This questionnaire has been used extensively in oncology research in the world and has been translated and validated into approximately 81 languages for the quality of life of cancer patients. The printed questionnaire was given to the patient to be filled in accompanied by the researcher. How to calculate quality of life scores using the EORTC QLQ C-30 questionnaire consists of two steps, first step the calculating raw scores and the second step is linear transformation. The interpretation are <0-500 severe state, 501-1000 moderate state, >1000 good state. The validity and translation of the EORTC QLQ C-30 into Indonesian in cancer patients in Indonesia has been done by Perwitasari et al. The difference between the maximum possible value of the raw score and the minimum possible value. Because each item scores between 1-4, range = 3, except for items that contribute to global health / QOL status, which consists of 7 questions, range = 6

## STATISTICAL ANALYSIS

The analysis in this study is a univariate analysis to look for patient characteristics and an analysis is performed to find the frequency distribution of patients in this study .

## RESULTS

**Table 1 . Patient Characteristics**

Characteristics		N	%
Age	≤ 45 years	5	17.86
	> 45 years	23	82.14
Stadium	II B	11	39.29
	III A	1	3.57
	III B	16	57.14
The response	Complete response	28	100
Histopathology	Adenocarcinoma	5	17.86
	Squamous cell carcinoma	23	82.14
Therapy	External radiation + Brakitrapi	17	60.71
	External radiation + Booster	11	39.29

Based on the table above, it was found that the majority of patients in this study had age over 45 years as many as 23 (82.14%). The majority of patients were patients with stage IIIB of 16 (57.14%), found from the most histopathological results were squamous cell carcinoma 23 (82.14%) and the majority were patients who had undergone external radiation plus brachytherapy as many as 17 (60.71 %).

**Table 2. Quality of Life in Post-Radiation Cervical Cancer Patients**

Group	Measurement Type	The mean		Elementary school
<b>Functional Scale</b>	Physical function	93.61	±	9.75
	Role Function	95.36	±	9.81
	Emotional Function	99.39	±	2.23
	Cognitive Function	99.43	±	3.02
	Social Function	94.96	±	9.43
	<b>Functional Scale Score</b>		<b>482.75</b>	±
<b>Scale of Symptoms</b>	Fatigue	16.07	±	13.05
	Nausea and Vomiting	6.32	±	8.00
	Pain	15.18	±	14.18
	Out of breath	4.71	±	11.76
	Insomnia	14.14	±	16.63

Loss of appetite	5.89	±	12.87
Constipation	10.64	±	22.25
Diarrhea	3.54	±	10.39
Financial Difficulties	4.71	±	11.76
<b>Symptoms Scale Score</b>	<b>81.21</b>	<b>±</b>	<b>120.90</b>

<b>Global Life Scores / Quality of Life</b>	Global Health Status	89.04	±	22.95
	<b>Global Life Scores / Quality of Life</b>	<b>89.04</b>	<b>±</b>	<b>22.95</b>
<b>Quality of Life Scores</b>		<b>653.00</b>	<b>±</b>	<b>178.10</b>
<b>Quality of Life Interpretation</b>			<b>Is</b>	

Based on the above table, it was found that after receiving radiotherapy, the functional scale score of the patient was  $482.75 \pm 34.25$ ; the symptom scale score was  $81.21 \pm 120.90$ ; the global life score is  $89.04 \pm 22.95$ . From the results above obtained a quality of life score of  $653.00 \pm 178.10$  with an interpretation of the quality of life of patients is moderate.

**Table 3 . Comparison of Radiotherapy with Global Life Scores**

Type of Therapy	Global Status Value (QOL)		P-value
	Mean	SD	
External radiation + B rickets	90.94	± 27.87	0.760 *
External radiation + B ooster	86.09	± 12.76	

\* Mann Whitney

Based on the table above, the average global status value of patients receiving therapy in the form of external radiation and brachytherapy was  $90.94 \pm 27.87$ . The average global status value of patients receiving therapy in the form of external radiation and booster was  $86.09 \pm 12.76$ . Test results chi-square shows that there is no significant difference in global status (QOL) based on the type of therapy given, with p-value = 0.76 ( p-value > 0.05) .

## Discussion

Based on the research, the patient characteristics data were obtained, the majority of patients in this study had age over 45 years as many as 23 (82.14%). The majority of patients were patients with stage IIIB of 16 (57.14%), found from the most histopathological results were squamous cell carcinoma 23 (82.14%) and the majority were patients who had undergone external radiation plus brachytherapy as many as 17 (60.71 %). This is consistent with the results of research from Azizah . Descriptive research with a cross sectional approach was conducted in June 2014 for cervical cancer patients who underwent complete radiotherapy at Arifin Achmad Regional Hospital 2011-2013. Respondents were selected according to the criteria used in this study. The number of respondents obtained in this study consisted of 31 respondents. While the population in this study was 39 people, 8 people have died. This study involved 31 cervical cancer patients who underwent complete radiotherapy at Arifin Achmad Regional Hospital in Riau Province. Research respondents based on age consisted of respondents in the age range 40 - 49 years 48.39%, age range 50 - 59 years 32.25% and the age range at age 60 - 69 years were 19.35%. Then the most age range in this study is the age range of 40-49 years. This is consistent with research conducted by S. Van Loon who conducted a study of 58 cervical cancer patients in 1996 and found the majority of patients to be 20.3% aged 40-44 years and the average age of 46 years. Other sources explain the age of cervical cancer patients on average 36-60 years, most between 45-50 years. This is because the latent period from the pre-invasive phase to being invasive takes 10 years. <sup>8</sup>This is also in accordance with research conducted by Lia Kariswa Saraswati in 2011, that cervical cancer is often detected at age > 40 years with a frequency of 41 respondents (70.7%). <sup>4</sup>Women who are married under the

age of 16 are usually 10-12 times more likely to develop cervical cancer compared to those who are married above the age of 20 years.<sup>5,6</sup>

Based on table 5, it was found that after receiving radiotherapy, the functional scale score of the patient was  $482.75 \pm 34.25$ ; the symptom scale score was  $81.21 \pm 120.90$ ; the global life score is  $89.04 \pm 22.95$ . From the results above obtained a quality of life score of  $653.00 \pm 178.10$  with an interpretation of the quality of life of patients is moderate.

Based on Riske's research, the quality of life of cancer patients is also influenced by several factors, namely education, income, time and distance needed to get to the hospital, the stage of cancer, duration of treatment, type of treatment and type of cancer suffered.<sup>7,9,10</sup> In this research, the result is that the confounding variable is complete response or partial response. The quality of life of patients in this study was assessed in several sections namely global quality of life, quality of life of cervical cancer and quality of life of ovarian cancer. Each assessment is divided into several domains, namely the public health domain, functional domain and symptom domain. In the functional domain, the higher score indicates a higher response rate. So the value or high scores on the functional domains show a high health functions also, when showing a high score or value of the high or good quality of life, while the quality of life domain scores showed symptoms if high, then the symptoms or problems experienced by too high<sup>11</sup>. Assessment of quality of life proves that it is not only important to deal with cancer symptoms optimally but also as additional information in evaluating the results of treatment<sup>12</sup>.

Evaluation of the response of cervical cancer therapy post radiotherapy is done periodically, especially in the first 2 years after therapy. The first year after therapy, the evaluation is done every 3 months while the second year is done every 6 months, in the third year the evaluation is done every year.

From table 6 Based on the above table, the average global status value of patients receiving therapy in the form of external radiation and brachytherapy is  $90.94 \pm 27.87$  The average global status value of patients receiving therapy in the form of external radiation and booster is  $86.09 \pm 12.76$ . Test results chi-square shows that there is no significant difference in global status (QOL) based on the type of therapy given, with p-value = 0.76 ( p-value > 0.05) .

The quality of life of cervical cancer patients is one of the important things to assess the side effects of a therapeutic treatment. Quality of life can describe a burden of a sufferer due to his illness and the therapy he gets. Accuracy in measuring quality of life is useful to know the disease process and the therapeutic effect given to patients, thus patients suffering from cervical cancer undergoing complete radiotherapy need to be examined their quality of life. In this study using the EORTC QLQ C-30 questionnaire found the quality of life of post-radiation cervical cancer patients in H. Adam Malik General Hospital Medan from September 25 to October 7, 2019 was moderate.

## CONCLUSION

The majority of patients in this study had age over 45 years as many as 23 (82.14%), with the majority of patients with stage IIIB as many as 16 (57.14%), the highest histopathological results were scuamos cell carcinoma 23 (82.14%) and have received complete response therapy in 28 (100%) patients . Based on the research it was found that after receiving radiotherapy, the functional scale score of the patient was  $483.37 \pm 34.75$ , the scale of symptoms was  $81.21 \pm 120.90$ , the global life score was  $89.04 \pm 22.95$ . From the results above obtained a quality of life score of  $653.00 \pm 178.10$  with an interpretation of the quality of life of patients is moderate.

Based on the results of the study, found the average global status value of patients receiving therapy in the form of external radiation and brachytherapy was  $90.94 \pm 27.87$  and the average global status value of patients receiving therapy in the form of external radiation and booster was  $86.09 \pm 12, 76$ . Test results chi-square shows that there is no significant difference in global status (QOL) based on the type of therapy given, with p-value = 0.76 ( p-value > 0.05) . The results showed that the quality of life of post-radiation cervical cancer patients at UP Hospital Haji Adam Malik Medan was classified as moderate. To improve the quality of life of cancer patients it is necessary to assess or identify the need for this service since the patient was diagnosed, underwent therapy and when the therapy process is complete. This study needs to be developed by conducting further research on patients diagnosed with cervical cancer to determine the supportive service needs needed and their relationship with quality of life with quantitative methods, in addition to that, multicenter research is needed to validate this questionnaire in its wider use to improve the quality of service in cervical cancer patients post radiation.

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## ETHICS

All research data included in this study were obtained from SAMPLE at the hospital concerned. Existing data will be recorded by researchers and then processed data. This research was conducted with the approval of the Ethics Committee of the Faculty of Medicine, University of North Sumatra.

## REFERENCE

1. WHO. 2019. Cancer. Cervical Cancer <https://www.who.int/cancer/prevention/diagnosis-screening/cervical-cancer/en/> .
2. ICO / IARC. Indonesia Human Papillomavirus and Related Cancers, Fact Sheet 2018. ICO / IARC HPV Information Center Institut Català d'Oncologia Avda. Gran Via de l'Hospitalet. 2018: 199-203.
3. Park SY, Bae DS, Nam JH, Park CT, Cho CH, Lee JM, Lee MK, Kim SH, Park SM, Yun YH. Quality of life and sexual problems in disease-free survivors of cervical cancer compared with the general population. *Cancer: Interdisciplinary International Journal of the American Cancer Society*. 2007 Dec 15; 110 (12): 2716-25.
4. ESMO. Cervical cancer. The ESMO Clinical Practice Guidelines. Cervical Cancer: ESMO Clinical Practice Guidelines. Published in 2017 - *Ann Oncol* 2017; 28 (suppl 4): iv72 – iv83.
5. Beyzadeoglu, M, Ozyigit, G, Ebruli, C. Basic Radiation Oncology: Radiobiology. Springer Heidelberg Dordrecht London New York. Library of Congress Control Number: 2010925732. DOI: 10.1007 / 978-3-642-11666-7
6. Eifel PJ, Winter K, Morris M, Levenback C, Grigsby PW, Cooper J et al. Pelvic irradiation with concurrent chemotherapy versus pelvic and para-aortic irradiation for high-risk cervical cancer: an update of radiation oncology group trial (RTOG) 90-01. *J Clin Oncol* 2004; 22: 872-880.
7. Weiner AA, Schwarz JK. Intracavitary Brachytherapy for Gynecologic Malignancies: Applications and Innovations. *Mo Med*. 2015; 112 (5): 366–372.
8. Patankar SS, Tergas AI, Deutsch I, et al. High versus low-dose rate of brachytherapy for cervical cancer. *Gynecol Oncol*. 2015; 136 (3): 534-541. doi: 10.1016 / j.ygyno.2014.12.038
9. Landoni F, Colombo A, Milani R, Placa F, Zanagnolo V, Mangioni C. Randomized study between radical surgery and radiotherapy for the treatment of stage IB-IIA cervical cancer: 20-year update. *J Gynecol Oncol*. 2017; 28 (3): e34. doi: 10.3802 / jgo.2017.28.e3493
10. Tatsuka, H. Health Effects of Radiation (Acute and Late effects). ANSN Regional Workshop on Medical Response to Radiological Emergency Handling Complex Situations 1-4 October 2013, Chiba, Japan. Download from: <https://ansn.iaea.org/common/topics/opentopic.aspx?id=13089>
11. Biglia N. Lower Body Lymphedema in Patients with Gynecologic Cancer. *ANTICANCER RESEARCH* 37: 4005-4015 (2017) doi: 10.21873 / anticancer.11785
12. Bae H. Sexual function, depression, and quality of life in patients with cervical cancer. *Support Care Cancer*. 2016 Mar; 24 (3): 1277-83. doi: 10.1007 / s00520-015-2918-z. Epub 2015 Aug 26.