Original article **UDC: 616-058:[616.8-009.7::616.146-006.6**
doi:10.5633/amm.2018.0211

THE INFLUENCE OF CANCER PAIN ON THE QUALITY OF LIFE IN PATIENTS WITH ADVANCED CERVICAL CANCER: ONE-YEAR SINGLE CENTER EXPERIENCE

Olivera Dunjić[1], Srdjan Ljubisavljević[2,3]

The aim of the study was to investigate the incidence of pain in patients at various stages of inoperable cervical cancer, establish clinical phenotype of pain, as well as the degree of impact of pain on quality of life and its indicators.

The study included 102 patients with a pathohistological finding of inoperable cervical cancer. A numerical scale (NRS) was used to determine the severity of the pain. The following parameters of quality of life were observed: appetite, sleep, mood, social interaction and general activity. Patients assessed the degree of pain on a scale from zero to ten for each of these parameters. By adding these values, the score (0-50) defining the quality of life was obtained. The impact of pain on the quality of life was determined before specific oncological treatment and three months after therapy.

Before therapy, scores of pain effects on appetite, sleep, mood, social interaction, general activity, as well as quality of life were significantly higher in patients with severe and the worst possible pain than in patients with mild (ANOVA and Tukey test: $p < 0.001$) and moderate pain ($p < 0.01$). The score of impact of pain on the quality of life after therapy was significantly higher in patients with the worst possible pain (48.57 ± 1.81) than in patients with mild (4.50 ± 10.79; $p < 0.001$), moderate (15.56 ± 17.34; $p < 0.001$) and severe pain (17.61 ± 21.88; $p < 0.01$).

Cancer pain reduces the motive for treatment, affects basic parameters such as appetite, sleep, mood, social interaction and general activity. All this significantly reduces the quality of life and performance status, both before and after the application of adequate therapeutic procedures.

Acta Medica Medianae 2018;57(2):66-74.

Key words: *pain, cervical cancer, life quality*

[1]University of Niš, Medical Faculty, Institute of Pathophysiology, Niš, Serbia
[2]University of Niš, Medical Faculty, Niš, Serbia
[3]Clinic of Neurology, Clinical Center Niš,Niš, Serbia

Contact: Olivera Dunjić
Institute of Pathophysiology, Medical Faculty, University of Niš
Bul. dr Zorana Djindjića 81, 18 000 Niš, Serbia
E-mail: olja@medfak.ni.ac.rs

Introduction

Pain is defined as an unpleasant sensory and e-motional experience associated with actual or potential damage of tissue or the sensation described in terms of such damage (1). Pain is an individual and subjective feeling modulated by physiological, psychological and other factors, such as previous experience, culture, fear and anxiety. In a wider sense, "the pain is all that the patient says hurts him" (2).

Long and strong pain may completely change all reactions of a person, inhibit motivations and lead to the loss of will to live. It is the most common cause of suffering of patients with malignant disease (3,4). It occurs in all stages of malignancy, but its frequency and intensity increases with the progression of malignant disease (3).

Cancer pain significantly affects the quality of life of patients by changing all the components (physical, social, psychological and spiritual) (5, 6). This pain reduces the motive for treatment, affects basic parameters such as appetite, sleep, mood and social interaction (7). All these factors of impaired quality of life by feedback increase the severity of pain, which is why the severity of pain usually does not correlate with the severity of painful sensation. Long-standing uncontrolled pain has a very negative effect because it is perceived by patients as a signal of progression of the disease, causes doubt in healing, and leads to hopelessness and depression (4,8). This creates a "vicious circle" that pain affects the possi-

bility of healing, and limited treatment options reduce the therapeutic response leading to disease progression, which inevitably results in an increase of the pain intensity (9,10).

Women with advanced cervical cancer are known to experience pain and quality of life deficits as a result of disease progression, and quality of life has been reported as poor and generally lower than published norms in patients with advanced cervical cancer (11,12).

Therefore, the aim of the research was to study the incidence of pain in different stages of advanced cervical cancer, determine the clinical phenotype of pain, as well as the degree of impact of pain on the quality of life and its indicators.

Patients and methods

This is a prospective study conducted between January 2010 and July 2011 at the Oncology Clinic, Clinical Center Niš, University of Niš, Serbia. The study followed the tenets of the Declaration of Helsinki. An informed consent was obtained from each patient after they were explained the nature of the study.

The research included 102 female patients with pathohistologically verified advanced cervical cancer in FIGO stages II-b, III-a, III-b, IV-a and IV-b. Patients were consecutively enrolled as they presented at the Oncology Clinic. All the patients underwent a complete clinical and paraclinical examination as follows: before being referred to the oncology team, the patients underwent a standard clinical procedure (gynecological examination, Papanicolaou test, colposcopy, cervical biopsy and endocervical curettage). After the pathohistological verification of malignity (13), the stage of the disease was determined according to the FIGO classification (14). In order to estimate the degree of the local and metastatic spread of the tumor, the following diagnostic procedures were used: two-plane chest x-ray, abdominal and pelvic ultrasound, computed tomography (CT) (if necessary), and magnetic resonance (MR) (in exceptional cases). Laboratory analyses included the determination of the sedimentation rate, hematological parameters, and parameters related to the liver and kidney function.

Patients with intellectual incapacity to answer to the proposed questionnaire for the pain evaluation were not included in this study.

According to the consulting body decision, the patients were referred to a specific oncological treatment which included local or systemic therapy for the treatment of the underlying disease, and palliative radiation therapy was carried out in an attempt to control locoregional disease and anti-dolorous effect. All patients were also treated with analgesic therapy according to the current WHO guidelines (15, 16).

Pain Evaluations

Medical history was obtained for each patient and it included data related to the presence or absence of pain, its character, localization, irradiation, duration, primary therapy effect, etc. To determine the intensity of pain, numerical rating scale (NRS) was used (0-10), where 0 denotes the absence of pain and 10 the worst possible pain. The patients with the intensity of pain from 1 to 4 belonged to the group of patients with mild pain. The patients with the intensity of pain rated as 5 and 6 were assigned to the group of moderate pain, whereas the patients with the intensity of pain from 7 to 9 belonged to the group of severe pain.

According to the intensity of pain, the patients were randomly divided into five groups: group I – 34 patients without pain; group II – 16 patients with mild pain; group III – 27 patients with moderate pain; group IV – 18 patients with severe pain; group V – 7 patients with worst possible pain.

The determination of the intensity of pain was done at the time of establishing the diagnosis i.e. before the introduction of any cancer treatment, during treatment (in the middle of the therapy cycle), and after cancer treatment (at the first control examination three months later).

Quality of life assessment

Along with determining the pain intensity, the influence on the parameters that are important for the quality of life was evaluated. The parameters of quality of life included: appetite, sleep, mood, social interaction and general activity. Patients assessed the degree of pain on a scale from zero to ten for each of these parameters, and by adding these values, the score (0-50) defining the quality of life was obtained. The score was low in patients with good quality of life, and reached maximum in patients with the poorest quality of life. The impact of pain on the quality of life was determined before specific oncological treatment and three months after the therapy. All these assessments were based on the own assessment of the patients themselves.

Statistics

The comparison of mean values of numerical data between the groups of examinees was done using an analysis of variance (ANOVA) and Tukey's post hoc test with Kramer's modifications for unequal sample sizes. The comparison of frequencies of certain categories of data between the groups was performed by Mantel-Haenszel chi-square test or Fisher's exact test in cases when some of the expected frequencies of data were lower than 5. To test the effects of certain type of therapy on the changes in the intensity of pain, repeated measures ANOVA was applied together with Greenhouse-Geisser test. The essessment of coincidence between the values of pain intensity before and after treatment was done by calculating the Kappa coefficient. Assessment of the impact of pain intensity on the indicators of life quality was carried out by linear regression analysis. The coefficients of linear regression - B, as well as the borders of their 95% confidence interval (95% IP) were calculated. Testing of the significance of regression coefficients was done by Student's t-test. The threshold for statistical significance was set at $p <$

0.05 or 5%. Data were analyzed using PASW Statistics version 18.0.

Results

One hundred and two patients with pathohistologically verified advanced cervical cancer participated in the research undertaken in the period from January 2010 to July 2011. Their basic clinical characteristics are given in Table 1.

Clinical characteristics of pain are presented in Table 2.

The presence of pain before, during and after cancer treatment in all the patients is presented in Graph 1. Sixty-eight (66.7%) patients had pain prior to treatment, 61 (59.8%) patients in the course of treatment, and 37 (36.3%) patients reported pain after treatment. There is a statistically significant difference in the presence of pain before and after treatment ($p < 0.001$) and during and after treatment ($p < 0.01$).

The influence of pain on mental health is presented in Table 3. In patients with pain affecting mental health causing fear and depression, there were no significant differences between groups.

The impact of pain on the quality of life prior to therapy is presented in Table 4. The scores of impact of pain on appetite, sleep, mood, social interaction, general activity, and quality of life before therapy were significantly higher in patients with severe and the worst possible pain than in patients with mild (ANOVA and Tukey test: $p < 0.001$) and moderate pain ($p < 0.01$). The scores of impact of pain on sleep, general activity, as well as quality of life before therapy were significantly higher in patients with moderate pain than in patients with mild pain ($p < 0.001$ and $p < 0.01$).

Regression analysis also showed that the intensity of the pain was statistically significant ($p < 0.001$) before the therapy, affecting all indicators of quality of life. Any score increase in the intensity of pain for 1 was associated with a significant increase in the impact of pain on the overall quality of life by 4,815 (95% IP: 4,349 to 5,281) (Graph 2).

The influence of pain on the quality of life after therapy is given in Table 5. The score of pain impact on appetite after therapy was significantly higher in patients with the worst possible pain (9.29 ± 1.89) than in patients with mild (2.67 ± 4.62; $p < 0.05$) and moderate severe pain (3.67 ± 3.20; $p < 0.01$). The score of impact of pain on mood after therapy was significantly higher in patients with the worst possible pain (10.00 ± 0.00) than in patients with moderate pain (6.73 ± 2.79; $p < 0.05$).

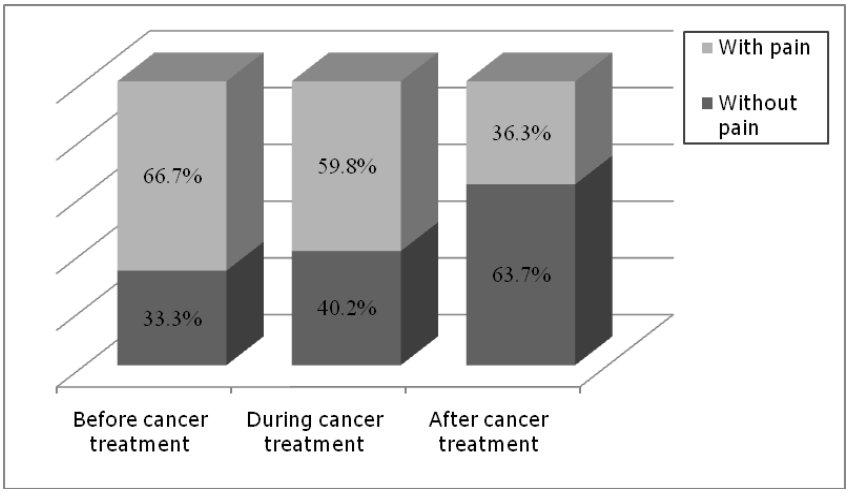
Table 1. Clinical characteristics of patients presented by groups

Characteristic	Group					Total
	No pain (n = 34)	Mild pain (n = 16)	Moderate pain (n = 27)	Severe pain (n = 18)	Worst possible pain (n = 7)	(n = 102)
	N (%)	N (%)	N (%)	N (%)	N (%)	N (%)
Age	61.12 ± 8.77	53.75 ± 8.33	60.33 ± 11.41	47.83 ± 11.66	64.00 ± 11.43	57.61 ± 11.31
FIGO stage of the disease						
II b	17 (50.0)	7 (43.8)	3 (11.1)	2 (11.1)	0 (0.0)	29 (28.4)
III a	2 (5.9)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	2 (2.0)
III b	15 (44.1)	9 (56.3)	21 (77.8)	16 (88.9)	5 (71.4)	66 (64.7)
IV a	0 (0.0)	0 (0.0)	2 (7.4)	0 (0.0)	0 (0.0)	2 (2.0)
IV b	0 (0.0)	0 (0.0)	1 (3.7)	0 (0.0)	2 (28.6)	3 (2.9)
Histological type of the tumor						
Planocellular carcinoma	31 (91.2)	15 (93.8)	24 (88.9)	16 (88.9)	6 (85.7)	92 (90.2)
Adeno carcinoma	3 (8.8)	1 (6.3)	3 (11.1)	2 (11.1)	1 (14.3)	10 (9.8)
Histological grade						
G 1	4 (11.8)	3 (18.8)	5 (18.5)	4 (22.2)	0 (0.0)	16 (15.7)
G 2	30 (88.2)	12 (75.0)	22 (81.5)	14 (77.8)	7 (100.0)	85 (83.3)
G 3	0 (0.0)	1 (6.3)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.0)

Table 2. Clinical characteristics of pain

Characteristic	Group				Total
	Mild pain (n=16)	Moderate pain (n=27)	Severe pain (n=18)	Worst possible pain (n=7)	(n=102)
	N (%)	N (%)	N (%)	N (%)	N (%)
Duration of pain before treatment					
Less than 2 weeks	4 (25.0)	3 (11.1)	0 (0.0)	0 (0.0)	7 (10.3)
2 to 4 weeks	5 (31.3)	6 (22.2)	6 (33.3)	0 (0.0)	17 (25.0)
1 to 3 months	4 (25.0)	9 (33.3)	3 (16.7)	5 (71.4)	21 (30.9)
More than 3 months	3 (18.8)	9 (33.3)	9 (50.0)	2 (28.6)	23 (33.8)
Rhythm of pain					
Constant	5 (31.3)	14 (51.9)	15 (83.3)	3 (42.9)	37 (54.4)
Occasional	11 (68.8)	13 (48.1)	3 (16.7)	4 (57.1)	31 (45.6)
Time of occurrence of pain					
In the morning	0 (0.0)	1 (3.7)	0 (0.0)	0 (0.0)	1 (1.5)
In the afternoon	1 (6.3)	4 (14.8)	0 (0.0)	0 (0.0)	5 (7.4)
In the evening	3 (18.8)	3 (11.1)	0 (0.0)	2 (28.6)	8 (11.8)
At night	4 (25.0)	4 (14.8)	9 (50.0)	0 (0.0)	17 (25.0)
During the whole day	8 (50.0)	15 (55.6)	9 (50.0)	5 (71.4)	37 (54.4)
Localization of pain					
Pelvis	16 (100.0)	22 (81.5)	16 (88.9)	6 (85.7)	60 (88.2)
Hips	3 (18.8)	10 (37.0)	9 (50.0)	7 (100.0)	29 (42.6)
Lumbar spine	7 (43.8)	18 (66.7)	12 (66.7)	7 (100.0)	44 (64.7)
Thigh	1 (6.3)	2 (7.4)	4 (22.2)	5 (71.4)	12 (17.6)
Quality of pain					
Throbbing	3 (18.8)	0 (0.0)	3 (16.7)	0 (0.0)	6 (8.8)
Stabbing	3 (18.8)	7 (25.9)	6 (33.3)	3 (42.9)	19 (27.9)
Picking	1 (6.3)	5 (18.5)	3 (16.7)	2 (28.6)	11 (16.2)
Burning	2 (12.5)	7 (25.9)	1 (5.6)	2 (28.6)	12 (17.6)
Tiring	0 (0.0)	2 (7.4)	0 (0.0)	0 (0.0)	2 (2.9)
Dull	7 (43.8)	6 (22.2)	5 (27.8)	0 (0.0)	18 (26.5)
Factors alleviating the pain					
Warmth	0 (0.0)	2 (7.4)	6 (33.3)	0 (0.0)	8 (11.8)
Massage	2 (12.5)	2 (7.4)	1 (5.6)	1 (14.3)	6 (8.8)
Pressure	1 (6.3)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.5)
Sitting	1 (6.3)	0 (0.0)	0 (0.0)	0 (0.0)	1 (1.5)
Lying	9 (56.3)	21 (77.8)	8 (44.4)	6 (85.7)	44 (64.7)
Walking	3 (18.8)	2 (7.4)	3 (16.7)	0 (0.0)	8 (11.8)
Factors aggravating the pain					
Pressure	4 (25.0)	4 (14.8)	3 (16.7)	0 (0.0)	11 (16.2)
Sitting	1 (6.3)	9 (33.3)	0 (0.0)	0 (0.0)	10 (14.7)
Standing	0 (0.0)	4 (14.8)	3 (16.7)	2 (28.6)	9 (13.2)
Lying	3 (18.8)	0 (0.0)	3 (16.7)	0 (0.0)	6 (8.8)
Walking	6 (37.5)	9 (33.3)	9 (50.0)	3 (42.9)	27 (39.7)
Getting out of bed	2 (12.5)	1 (3.7)	0 (0.0)	2 (28.6)	5 (7.4)

The score of impact of pain on social interaction after therapy was significantly higher in patients with severe (7.50 ± 3.51) and the worst possible pain (9.29 ± 0.95) than in patients with mild (0.00 ± 0.00; $p < 0.01$) and moderate pain (3.67 ± 3.70; $p < 0.01$). The score of impact of pain on the quality of life after therapy was significantly higher in patients with the worst possible pain (48.57 ± 1.81) than in patients with mild (4.50 ± 10.79; $p < 0.001$), moderate (15.56 ± 17.34; $p < 0.001$) and severe pain (17.61 ± 21.88; $p < 0.01$).The results of the regression analysis show that, the intensity of the pain after the therapy was statistically significant ($p < 0.001$) affecting all indicators of the quality of life. Any increase of the score of the pain intensity for 1 after therapy was associated with a significant increase of the impact of pain on the overall quality of life by 4,907 (95% IP: 4,604 to 5,209) (Graph 3).



Graph 1. The presence of pain before, during and after cancer treatment

Table 3. The influence of pain on mental health

Influence	Group				Total (n=68)
	Mild pain (n=16)	Moderate pain (n=27)	Severe pain (n=18)	Worst possible pain (n=7)	
Pain causes depression	6 (37.5%)	14 (51.9%)	12 (66.7%)	4 (57.1%)	36 (52.9%)
Pain causes fear	7 (43.8%)	14 (51.9%)	11 (61.1%)	6 (85.7%)	38 (55.9%)

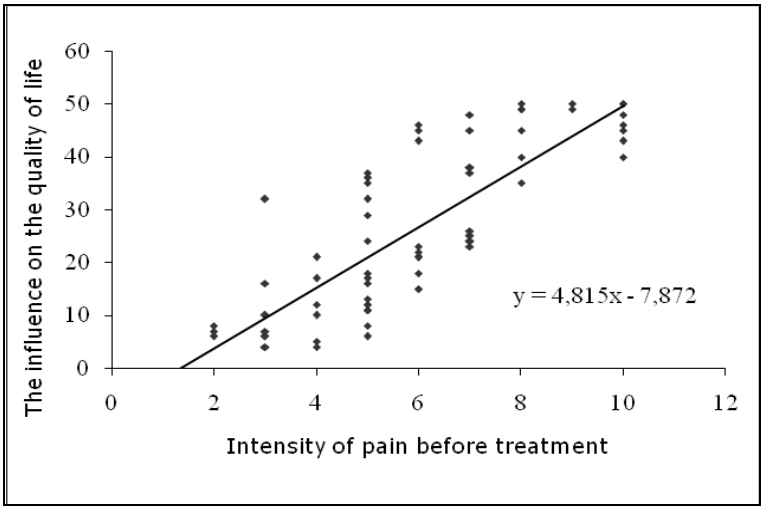
Table 4. The influence of pain on the quality of life before cancer treatment

Influence	Group					Total (n=102)
	No pain (n=34)	Mild pain (n=16)	Moderate pain (n=27)	Severe pain (n=18)	Worst possible Pain (n=7)	
The influence of pain on appetite	-	0.63 ± 2.03	2.15 ± 3.62	5.83 ± 4.06	8.14 ± 2.27	3.38 ± 4.13
The influence of pain on sleep	-	2.75 ± 2.02	6.04 ± 2.90	8.50 ± 2.31	10.00 ± 0.00	6.32 ± 3.36
The influence of pain on mood	-	4.06 ± 2.43	5.78 ± 2.68	8.39 ± 2.62	9.86 ± 0.38	6.49 ± 3.10
The influence of pain on social interaction	-	1.00 ± 2.42	2.33 ± 3.49	7.00 ± 3.99	8.29 ± 1.70	3.87 ± 4.23
The influence of pain on general activity	-	2.13 ± 2.63	5.81 ± 2.68	8.89 ± 1.41	9.71 ± 0.76	6.16 ± 3.48
The influence of pain on the quality of life	-	10.56 ± 7.64	22.11 ± 11.73	38.61 ± 10.25	46.00 ± 3.70	17.48 ± 17.74

Discussion

The results of our research have shown that pain is a common symptom in patients with advanced cervical cancer. Before being referred to cancer treatment, 66.7% of patients reported pain. As cancer treatment is the best way to treat cancer pain, since it decreases the tumor mass and thus alleviates and eliminates the pain, the number of patients having this pain decreased (from 59.8% during therapy to 36.3% after therapy).

The influence of pain on the mental health of patients with advanced carcinoma is very prominent (17, 18). Studies have shown that pain is closely associated with anxiety, fear and depression in patients with advanced malignant disease (19, 20).



Graph 2. The influence of pain on the quality of life before cancer treatment

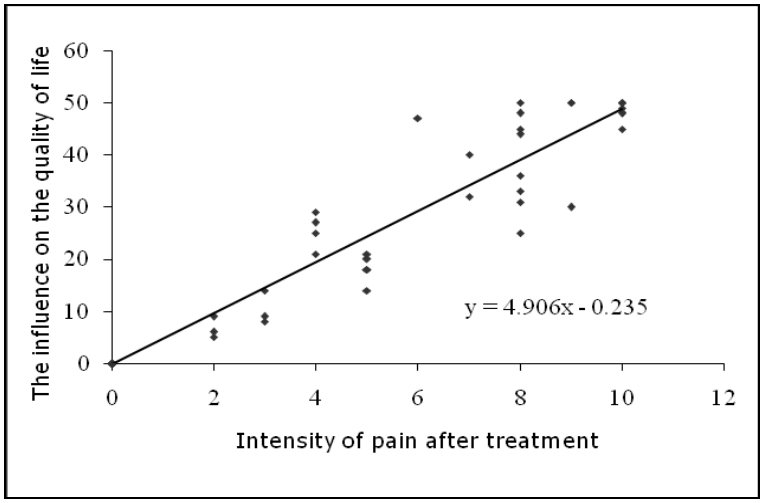
Table 5. The influence of pain on the quality of life after cancer treatment

Influence	Group					Total (n=102)
	No pain (n=34)	Mild pain (n=16)	Moderate pain (n=27)	Severe pain (n=18)	Worst possible pain (n=7)	
The influence of pain on appetite	1.50 ± 3.00	2.67 ± 4.62	3.67 ± 3.20	7.25 ± 3.62	9.29 ± 1.89	5.19 ± 4.03
The influence of pain on sleep	5.25 ± 2.22	6.33 ± 5.51	7.27 ± 2.87	8.63 ± 2.26	10.00 ± 0.00	7.78 ± 2.90
The influence of pain on mood	2.75 ± 1.50	7.67 ± 2.52	6.73 ± 2.79	8.88 ± 1.36	10.00 ± 0.00	7.46 ± 2.88
The influence of pain on social interaction	0.00 ± 0.00	0.00 ± 0.00	3.67 ± 3.70	7.50 ± 3.51	9.29 ± 0.95	4.86 ± 4.29
The influence of pain on general activity	2.00 ± 2.45	7.33 ± 3.06	6.67 ± 3.04	7.38 ± 3.70	10.00 ± 0.00	7.00 ± 3.45
The influence of pain on the quality of life	11.50 ±5 .69	4.50 ± 10.79	15.56 ± 17.34	17.61 ± 21.88	48.57 ± 1.81	16.60 ± 19.67

When cancer pain persists and worsens, it can serve as a sign of the progression of disease and can create a sense of hopelessness because patients fear that their lives are not worth continuing or patients lose the meaning of living if they must live in pain (21). In our study, depression appears to be most frequent in the group of patients with severe pain (66.7%), while it is least frequent in the group with mild pain (37.5%). Fear as important parameter for the mental health of patients shows high positive correlation with pain intensity and is present in 43.8% of patients with mild pain, in 51.9% of patients with moderate pain, in 61.1% of patients with severe pain, and even in 85.7% of patients with the worst possi ble pain.

Pain significantly affects the quality of life of patients with malignant disease (3). Many research results showed that pain was significantly correlated with appetite, mood, quality of sleeping, fatigue, pain intensity, daily activity, side effect, general appearance, and support from family (23) and the relationship between pain and quality of life was found to be reciprocal (24). If pain was not relieved, the patient's quality of life would certainly decrease. The results obtained in this study show poorer quality of life in proportion to the increase in pain intensity.

Before specific oncologic therapy, the scores of impact of pain on appetite, sleep, social interaction, general activity, and quality of life were significantly higher in patients with severe and the worst possible pain than in pati-ents with mild (ANOVA and Tukey test: $p < 0.001$) and moderate pain ($p < 0.01$).



Graph 3. The influence of pain on the quality of life after cancer treatment

After complete specific oncology therapy the distribution of the pain impact on the quality of life between some groups changes, the quality of life in all groups was noticed, except in the group with the worst possible pain where there was tendency of deterioration of the quality of life with the almost maximum score (48.57 ± 1.81). This finding also influenced the overall quality of life of all patients with pain, so there was no significant difference relatied to quality of life before and after therapy.

The score of impact of pain on appetite after therapy was significantly higher in patients with the worst possible pain (9.29 ± 1.89) compared to patients with mild (2.67 ± 4.62; $p < 0.05$) and moderate pain (3.67 ± 3.20; $p < 0.01$). The impact of pain on mood after therapy was significantly higher in patients with the worst possible pain (10.00 ± 0.00) than in patients with moderate pain (6.73 ± 2.79; $p < 0.05$). Unexpectedly, the pain showed to have great influence on the mood in a group of patients with mild pain, which may be explained by the disappointing expectation that all ailments will atop after the treatment. Also, painful sensations caused by the applied therapy (25, 26) are especially superposed in this group. They can explain the onset of pain after treatment in patients who felt no pain at the time of establishing the diagnosis.

The score of impact of pain on social interaction after therapy was significantly higher in patients with severe (7.50 ± 3.51) and the worst possible pain (9.29 ± 0.95) compared to patients with mild (0.00 ± 0.00; $p < 0.01$) and moderate pain (3.67 ± 3.70; $p < 0.01$).

Regression analysis also showed that the intensity of pain had statistically significantly ($p < 0.001$) high impact prior to therapy on all indicators of quality of life, as well as on the overall quality of life. Even after therapy, the intensity of the pain was statistically significant ($p < 0.001$), affecting all the indicators of quality of life and the overall quality of life.

Conclusion

The results of our study have demonstrated that pain is a common symptom in patients with advanced cervical cancer. Cancer pain reduces the motivation for treatment, affects basic parameters such as appetite, sleep, mood, social interaction and general activity. All this significantly reduces the quality of life and performance status, both before and after the application of adequate therapeutic procedures. The results of our research show poorer quality of life in proportion to the increase in pain intensity. A larger series of patients and a longer follow-up period are required to test the results of this research using also more comprehensive questionnaires for assessing the quality of life.

Acknowledgements

We want to thank to all the patients who were enrolled in this study.

Conflict of interest

Authors declare that they have no conflict of interest.

References

1. IASP Subcommittee on Taxonomy. Pain terms: a list with definitions and notes on usage. Pain 1979; 6(3): 249. [CrossRef] [PubMed]
2. Schmidt B, Hamamoto DT, Simone DA, Wilcox GL. Mechanism of Cancer Pain. Mol Interv 2010; 10(3): 164–78. [CrossRef] [PubMed]
3. Paice JA, Ferrell B. The management of cancer pain. CA-Cancer J Clin 2011; 61(3):157-82. [CrossRef] [PubMed]
4. Yang P, Sun LQ, Lu Q, Pang D, Ding Y. Quality of life in cancer patients with pain in Beijing. Chinese J Cancer Res 2012; 24(1):60-6. [CrossRef] [PubMed]
5. Mantyh PW. Cancer pain and its impact on diagnosis, survival and quality of life. Nat Rev Neurosci 2006; 7(10):797-809. [CrossRef] [PubMed]
6. Thienthong S, Pratheepawanit N, Limwattananon C, Maoleekoonpairoj S, Lertsanguansinchai P, Chanvej L. Pain and quality of life of cancer patients: a multicenter study in Thailand. J Med Assoc Thai 2006; 89 (8):1120-6. [PubMed]
7. Utne I, Miaskowski C, Bjordal K, Paul SM, Rustoen T. The relationships between mood disturbances and pain, hope, and quality of life in hospitalized cancer patients with pain on regularly scheduled opioid analgesic. J Palliat Med 2010;13(3):311-8. [CrossRef] [PubMed]
8. Bartoces MG, Severson RK, Rusin BA, Schwartz KL, Ruterbusch JJ, Neale AV. Quality of life and self-esteem of long term survivors of invasive and noninvasive cervical cancer. J Womens Health 2009; 18(5): 655-61. [CrossRef] [PubMed]
9. Baze C, Monk BJ, Herzog TJ. The impact of cervical cancer on quality of life: A personal account. Gynecol Oncol 2008; 109(Suppl 2):S12-4. [CrossRef] [PubMed]
10. Herzog TJ, Wright JD. The impact of cervical cancer on quality of life - The components and means for management. Gynecol Oncol 2007; 107(3):572-7. [CrossRef] [PubMed]
11. duToit GC, Kidd M. Prospective quality of life study of South African women undergoing treatment for advanced-stage cervical cancer. Clin Ther 2015; 37 (10):2324-31. [CrossRef] [PubMed]
12. Chase DM, Huang HQ, Wenzel L, Cella D, McQuellon R, Long HJ, et al. Quality of life and survival in advanced cervical cancer: a Gynecologic Oncology Group study. Gynecol Oncol 2012; 125(2):315-9. [CrossRef] [PubMed]
13. World Health Organization classification of tumours: pathology and genetics of tumours of the breast and female genital organs. Tavassoli FA, Devilee P, editors. Lyon: IARC Press; 2003. [CrossRef]
14. Haie-Meder C, Morice P, Castiglione M. Cervical cancer: ESMO clinical practice guidelines for diagnosis, treatment and follow-up. Ann Oncol 2010;21(Suppl 5): v37-40. [CrossRef] [PubMed]
15. Jadad AR, Browman GP. The WHO analgesic ladder for cancer pain management. Steping up the quality of its evaluation. JAMA 1995; 274(23):1870-3. [CrossRef] [PubMed]
16. Charlton E. Cancer pain. Core Curriculum for professional education in pain. Charlton E, editor. Seattle: IASP Press; 2005; p.139-46. [CrossRef]
17. Bradley S, Rose S, Lutgendorf S, Costanzo E, Anderson B. Quality of life and mental health in cervical and endometrial cancer survivors. Gynecol Oncol 2006; 100(3):479-86. [CrossRef] [PubMed]
18. Distefano M, Riccardi S, Capelli G, Costantini B, Petrillo M, Ricci C, et al. Quality of life and psychological distress in locally advanced cervical cancer patients administered pre-operative chemoradiotherapy. Gynecol Oncol 2008; 111(1):144-50. [CrossRef] [PubMed]
19. Osann K, Hsieh S, Nelson EL, Monk BJ, Chase D, Cella D, et al. Factors associated with poor quality of life among cervical cancer survivors: implications for clinical care and clinical trials. Gynecol Oncol 2014; 135(2):266-72. [CrossRef] [PubMed]
20. Korfage IJ, Essink-Bot ML, Mols F, van de Poll-Franse L, Kruitwagen R, van Ballegooijen M. Health-related quality of life in cervical cancer survivors: a population-based survey. Int J Radiat Oncol 2009; 73(5): 1501–9. [CrossRef] [PubMed]
21. Tavoli A, Montazeri A, Roshan R, Tavoli Z, Melyani M. Depression and quality of life in cancer patients with and without pain: the role of pain beliefs. BMC Cancer 2008; 8:177. [CrossRef] [PubMed]
22. Black B, Herr K, Fine P, Sanders S, Tang X, Bergen-Jackson K, et al. The relationships among pain, non-pain symptoms, and quality of life measures in older adults with cancer receiving hospice care. Pain Med 2011; 12(6):880-9. [CrossRef] [PubMed]
23. Deng D, Fu L, Zhao YX, Wu X, Zhang G, Liang C, et al. The relationship between cancer pain and quality of life in patients newly admitted to Wuhan Hospice Center of China. Am J Hosp Palliat Me 2012; 29(1):53-9. [CrossRef] [PubMed]
24. Pasek M, Suchocka L, Urbański K. Quality of life in cervical cancer patients treated with radiation therapy. J Clin Nurs 2013; 22(5-6):690-7. [CrossRef] [PubMed]
25. Mirabeau-Beale KL, Viswanathan AN. Quality of life (QOL) in women treated for gynecologic malignancies with radiation therapy: a literature review of patient-reported outcomes. Gynecol Oncol 2014; 134(2):403-9. [CrossRef] [PubMed]

Originalni rad **UDC: 616-058:[616.8-009.7::616.146-006.6**
doi:10.5633/amm.2018.0211

UTICAJ KANCERSKOG BOLA NA KVALITET ŽIVOTA BOLESNICA SA INOPERABILNIM KARCINOMOM GRLIĆA MATERICE: NAŠE JEDNOGODIŠNJE ISKUSTVO

Olivera Dunjić[1], Srđan Ljubisavljević[2,3]

[1]Univerzitet u Nišu, Medicinski fakultet, Institut za patofiziologiju, Niš, Srbija
[2]Univerzitet u Nišu, Medicinski fakultet, Niš, Srbija
[3]Klinika za neurologiju, Klinički centar Niš, Niš, Srbija

Kontakt: Olivera Dunjić
Institut za patofiziologiju, Medicinski fakultet Niš
Bul. dr Zorana Đinđića 81, 18 000 Niš, Srbija
E-mail: olja@medfak.ni.ac.rs

Cij rada bio je ispitati učestalost pojave bola kod bolesnica u različitim stadijumima inoperabilnog karcinoma grlića materice, utvrditi klinički fenotip bola, kao i stepen uticaja bola na kvalitet života i na njegove pokazatelje.

Ispitivanjem su obuhvaćene 102 bolesnice sa patohistološki verifikovanim inoperabilnim karcinomom grlića materice. Za određivanje jačine bola korišćena je numerička skala (NRS). Kao parametri kvaliteta života sagledavani su apetit, san, raspoloženje, odnos sa drugima i opšta aktivnost. Bolesnice su davale ocenu od nula do deset za svaki od ovih parametara, a sabiranjem tih vrednosti dobijen je skor (0-50) koji definiše kvalitet života. Uticaj bola na kvalitet života određivan je pre započinjanja specifičnog onkološkog lečenja i tri meseca nakon kompletiranja terapije.

Pre terapije skorovi uticaja bola na apetit, san, raspoloženje, odnos sa drugim ljudima, opštu aktivnost, kao i kvalitet života bili su značajno veći kod bolesnica sa jakim i najjačim mogućim bolom nego kod bolesnica sa umerenim (ANOVA i Tuki test: $p < 0,001$) i srednje jakim bolom ($p < 0,01$). Skor uticaja bola na kvalitet života posle terapije bio je značajno veći kod bolesnica sa najjačim mogućim bolom (48,57 ± 1,81) nego kod bolesnica sa umerenim (4,50 ± 10,79; $p < 0,001$), srednje jakim (15,56 ± 17,34; $p < 0,001$) i jakim bolom (17,61 ± 21,88; $p < 0,01$).

Kancerski bol smanjuje motiv za lečenje, utiče na osnovne performanse kao što su apetit, san, raspoloženje, odnos sa drugim ljudima i opštu aktivnost. Sve ovo značajno smanjuje kvalitet života i performans status, kako pre tako i nakon primene adekvatnih terapijskih procedura.

Acta Medica Medianae 2018;57(2):66-74.

Ključne reči: *bol, cervikalni karcinom, kvalitet života*