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ORIGINAL PAPER

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The Influence of Palliative Care on Quality of Life in Patients with Lung Cancer

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ABSTRACT

Objective: Objective of this work is to determine influence of palliative care on the quality of life in patients with lung cancer.

Subjects and Methods: Our study group included 40 patients, consecutively selected, which is determined by symptomatic treatment and hospitalized at the Department of Palliative Care of University Clinical Center Tuzla. The control group consisted of 40 patients who had a diagnosis of lung cancer treated at home by an authorized ambulance Health Center Tuzla. Tests in both groups were carried out using the test SF-36 scale for assessing quality of life in period of two weeks. Two-stage test was performed, initially, immediately after disease was diagnosed, and two weeks later. **Results:** All life quality parameters (general, physical and emotional) were better in second test, in patients who were situated in the department of palliative care (study group) ($p < 0.0001$). In the area of physical health (physical function, physical limitations, pain, general health), in patients who have resided in the department of palliative care (study group), showed a statistically significant improvement in all the aspects ($p < 0.0001$). In the study patients all aspects of mental health were statistically significantly improved after two weeks being in department ($p < 0.0001$). **Conclusion:** Two weeks treatment of patients with lung cancer in the Department of Palliative Care significantly improve all general aspects of quality of life.

Keywords: Lung cancer, Department of palliative care, Quality of life.

1. INTRODUCTION

The term "palliative" is of Latin origin and comes from the word *pallium*, which means robe, cover, veil, raincoat. Indeed, in palliative care symptoms "coats", "cover" with various treatments in order to improve the comfort of patients, or to eliminate discomfort, such as overcoat protects the body from rain and cold (1-4). The word "hospice" is often used in relation to palliative care and, although it is in use with multiple meanings (sometimes it's the building—"St. Christopher's Hospice", sometimes a group of employees—"team of hospice," and sometimes the program - "Hospice service"), a hospice is primarily elaboration of the philosophy that the Association for Hospice of South Australia can be summarized as follows: "hospice care accepts death as a normal process and is understood as the last phase of life of the person who is dying, as a special time for integration and reconciliation" (5).

Furthermore, acceptance of the need of dying persons to live fully, proudly and comfortably until they die, and do

not hasten nor postpone death. Finally, it provides support to grieving family and friends (1, 2). Interestingly, palliative care and hospice are mainly related to malignant tumors (in the public perception, perception of laic, but also in perception of health professionals in general, and in professional and scientific literature), although many other (non-malignant), internal or neurological diseases can and should be treated with "palliative "and / or" hospice " method (3, 4).

Quality of life is a wide term that is used in many natural and social sciences. It includes aspects of environmental protection in which we live as a social geographical aspects. When this term refers to health it is common to use the term "quality of life related to health." From a health perspective, quality of life refers to the social, emotional and physical well-being of patient after treatment, reflecting the definition of health of World Health Organization (WHO). Quality of life presents functional effect of the disease and the effect of therapy on patients, as observed by patient itself. There are four major areas that contribute to the overall quality

of life: physical and working ability, psychological status, social contacts. Nordenfelt (5) defined the quality of life as the evaluation of their own life situation of the individual, equated it with the pleasure of life.

Starting from the fact that in Tuzla, within the University Clinical Center, Department of Palliative Care existing for several years now and daily positive experiences in working with people suffering from lung cancer who have used this service, and a relatively small number of studies in this area, in this work was made an attempt to establish the effect of palliative care on the quality of life of patients with lung cancer.

2. PATIENTS AND METHODS

A prospective study was conducted at the Department of Palliative Care Clinic for Pulmonary Diseases and Tuberculosis of University Clinical Center Tuzla. The study group included 40 patients diagnosed with advanced stage lung cancer at an advanced that were selected consecutively and were treated at the Department of Palliative Care. The control group was formed of the same number of patients with approximately the same age and sex distribution, that are after a diagnosis of lung cancer were treated at home by the authorized doctor from corresponding health center.

Tests in both groups were carried out using the test SF-36 scale for assessing quality of life in the space of two weeks. The possible answers were not suggested to the patients.

A total of 36 questions in the test SF-36 were divided into two groups, one referred to the total physical health, and the other to the total mental health. The result is obtained when the 36 questions, that carry a certain number of points, are grouped into eight sub-groups: physical function, physical limitation, emotional limitation, energy, emotional well-being, social function, pain and general health (6). Two groups were formed out of these eight groups: total physical and mental health, and of these two groups overall quality of life. Value to 0.25 implies to poor quality of life, 0.26 to 0.50 medium good, 0.51 to 0.75 is good, and over 0.75 points as the excellent quality of life.

Statistical analysis was performed using standard methods, descriptive and inference statistics. When testing statistical hypotheses significance level of 5% ($p < 0.05$) was used. The calculations were made in the program Arcus QuickStat Biomedical.

3. RESULTS

Quality of life was tested in study and in the control group before and after treatment. Since these were the same patients, paired test, called t-test was applied for paired samples. Quality of life was checked (tested) in the space of two weeks in both groups (experimental and control group). The first test was performed immediately after the lung cancer was diagnosed, and the second after two weeks.

All parameters of life quality (general, physical and emotional) were better in the second test, in patients who were treated in the department of palliative care (study group) ($p < 0.0001$). But in the control group (patients who were not treated at the department of palliative care) improvement of life quality was not recorded (Table 1).

In the analysis of life quality changes in the area of

Group	Disorder	First testing	Second testing	t	P
		(X $\pm$ SD)	(X $\pm$ SD)		
Study	General life quality	0.17 $\pm$ 0.10	0.62 $\pm$ 0.08	-29.11	<0.0001
	Physical life quality	0.16 $\pm$ 0.1	0.58 $\pm$ 0.08	-27.15	<0.0001
	Emotional life quality	0.19 $\pm$ 0.11	0.67 $\pm$ 0.08	-26.70	<0.0001
Control	General life quality	0.34 $\pm$ 0.12	0.34 $\pm$ 0.19	0.70	0.49
	Physical life quality	0.31 $\pm$ 0.18	0.31 $\pm$ 0.2	0.21	0.83
	Emotional life quality	0.37 $\pm$ 0.18	0.36 $\pm$ 0.19	1.07	0.29

Table 1. Distribution of patients who stayed in the department of palliative care according to two tests of quality of life. X – average value, SD – standard deviation, t-test value, p – statistical significance

Physical health	First testing	Second testing	t	p
	(X $\pm$ SD)	(X $\pm$ SD)		
Physical functions	0.11 $\pm$ 0.13	0.37 $\pm$ 0.19	-11.40	<0.0001
Physical limitation	0.02 $\pm$ 0.09	0.63 $\pm$ 0.23	-16.99	<0.0001
Pain	0.29 $\pm$ 0.15	0.67 $\pm$ 0.06	-15.04	<0.0001
General health	0.20 $\pm$ 0.12	0.62 $\pm$ 0.07	-21.33	<0.0001

Table 2. Distribution of respondents who have stayed in the department of palliative care according to changes in the area of physical health. X- average value, SD- standard deviation, t-test value, p- statistical significance

Physical health	First testing	Second testing	t	P
	(X $\pm$ SD)	(X $\pm$ SD)		
Physical functions	0.26 $\pm$ 0.22	0.29 $\pm$ 0.22	-3.24	0.002
Physical limitation	0.20 $\pm$ 0.30	0.24 $\pm$ 0.28	-1.36	0.183
Pain	0.45 $\pm$ 0.22	0.44 $\pm$ 0.23	1.33	0.190
General health	0.35 $\pm$ 0.16	0.29 $\pm$ 0.20	4.77	<0.0001

Table 3. Distribution of respondents who did not resided in the department of palliative care according to changes in the area of physical health. X- average value, SD- standard deviation, t-test value, p- statistical significance

physical health (physical function, physical limitations, pain, general health), in patients who have resided in the department of palliative care (study group), showed a statistically significant improvement in all the aspects ($p < 0.0001$) (Table 2). This was not the case in patients who have not resided in the department of palliative care. In these patients, there was a small improvement in quality of life of a field of physical function ($p = 0.002$) and the physical limitations ($p = 0.183$), while the pain ($p = 0.193$) and general health ($p < 0.0001$) (Table 3) deteriorates after two weeks.

In the study patients (who resided in the department of palliative care) all aspects of mental health were statistically significantly improved after two weeks stay in the department ($p < 0.0001$) (Table 4).

In the area of mental health in the control group of patients (who have not resided in the department of palliative care) in the second test, after two weeks, also showed improvement in emotional limitations and the same value

Mental health	First testing (X ± SD)	Second testing (X ± SD)	t	p
Emotional limitation	0.03 ± 0.12	0.61 ± 0.31	-12.3	<0.0001
Energy	0.25 ± 0.13	0.68 ± 0.06	-20.69	<0.0001
Emotional satisfaction	0.28 ± 0.13	0.71 ± 0.07	-19.88	<0.0001
Social function	0.20 ± 0.13	0.68 ± 0.10	-16.88	<0.0001

Table 4. Distribution of respondents who have stayed in the department of palliative care according to certain aspects of mental health. X- average value, SD- standard deviation, t-test value, p-statistical significance

Mental health	First testing (X ± SD)	Second testing (X ± SD)	t	p
Emotional limitation	0.17 ± 0.26	0.22 ± 0.24	-1.96	0.050
Energy	0.44 ± 0.15	0.41 ± 0.18	3.46	0.001
Emotional satisfaction	0.45 ± 0.15	0.42 ± 0.18	3.01	0.005
Social function	0.38 ± 0.22	0.38 ± 0.19	2.01	0.05

Table 5. Distribution of respondents who did not stay in the department of palliative care according to certain aspects of mental health. X- average value, SD- standard deviation, t-test value, p-statistical significance

for a social function, but statistically significantly less than in the study group, while energy ($p=0.001$) and emotional satisfaction ($p<0.005$) showed worse results (Table 5). Comparing these two groups for this aspect of quality of life was found significantly more pronounced improvement in the study group compared to the control group ($t=9.9$, $p<0.0001$).

4. DISCUSSION

The studies that have been conducted show the value of improving the quality of life in patients treated at the department of palliative care compared to those who were not treated at the department. Forty-three studies were performed in the UK that have examined the location of care of patients suffering from lung cancer. A study conducted at the Department of Oncology, McGill University on Department of palliative care determined the quality of life of patients treated in hospital conditions and ambulatory and received results of improvement in physical function and psychological. Reduced anxiety and depression, as well as improving the overall quality of life of the treated patients in the department. The study was conducted on 88 patients and evaluated with life quality test at the reception and after 8 days. The results showed improvement in physical, mental and general condition (7).

A study that was conducted on 58 patients with advanced cancer who was tested the first day and after two weeks, measuring the quality of life has shown a significant improvement of the physical and mental condition, along with rehabilitation of disease symptoms (8).

Lung cancer is the most common cancer in men population, as well as a cancer with worse five years survival (9). Due to specificity of lungs as an organ and vicinity of other important organs as heart, esophagus, large blood and lymphatic vessels leads very quickly to developing of symptoms that threaten the life of the patient (10). The family, as an es-

sential factor, suffers because it is in a situation where have no control over things that happening (11). The suffering and pain of the patient, lead them in a situation to seek for help, but due to the specific organization of hospitals and health centers adequate assistance to the patient and family is not possible (12). Only specific departments for care and therapy of patients and care of the family called Hospices can provide appropriate treatment with the participation of a multidisciplinary team consisting of: doctor, nurse, social worker, physical therapist, specialist in other specialties, religious official and volunteers (13).

Thus, our results confirm this claim because the value of the overall quality of life in hospitalized patients are much higher, while outpatient have the same value at the beginning and after two weeks of testing. The values of the physical quality of life were higher after treatment in the department, while in the ambulance patients is slightly worse. The emotional quality of life for hospitalized patients was higher, while the ambulance is slightly worse. Physical health with all the elements increases in hospitalized patients while in the patients treated in ambulances is imperceptibly different. Patients who were hospitalized have lower level of anxiety and depression after two weeks being in the department, and patients who were not hospitalized have values that are approximately the same at the beginning and after two weeks of testing.

All this tell us about the necessity for opening specialized institutions for treatment and care of advanced cancers, as it is the case in the world where the majority of Western European countries have hundreds of such hospitals already(14).

5. CONCLUSION

Treatment of patients with lung cancer in the Department of palliative care leads to a significant improvement in overall quality of life. All general aspects of quality of life in patients with lung cancer were significantly better after two weeks of treatment in the Department of palliative care. All aspects of the physical health of patients with lung cancer were statistically significantly better after a two-week treatment in the Department of palliative care. Total mental health in patients with lung cancer was significantly better after a two-week treatment in the Department of palliative care.

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- **Author's contribution:** Adnan Delibegović;substantial contribution to conception and design, substantial contribution to acquisition of data, substantial contribution to analysis and interpretation of data, drafting the article. Osman Sinanović; substantial contribution to conception and design, final approval of the version to be published. Gordan Galić, drafting the article,critically revising the article for important intellectual content. Adela Šabić; substantial contribution to analysis and interpretation of data, drafting the article. Dževad Šabić; substantial contribution to conception and design, substantial contribution to acquisition of data, substantial contribution to analysis and interpretation of data, drafting the article.

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