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DEPRESSION, ANXIETY AND QUALITY OF LIFE IN PATIENTS WITH MELANOMA

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Abstract

Background / Aim. Recent investigations have established a significant correlation between melanoma and quality of life, as well as anxiety and depression in these patients. In prognosis of melanoma, the most important is the stage in which it is diagnosed. The objective of our study was to analyze the quality of life, anxiety and depression in patients with a diagnosis of melanoma at different stages of the disease. Methods. In our cross-sectional study were included 40 consecutive patients with melanoma at diagnosis, which are diagnosed and treated at Department of Dermatology and Venerology Military Medical Academy during the period from October to November 2015. 20 respondents are in stage I and stage II (localized disease) and 20 respondents in stage IV (distant metastases). In our investigation we used EORTC Quality of Life Questionnaire (EORTC QLQ 30), Beck anxiety inventory (BAI) and Beck depression inventory (BDI). The statistical analysis included parametric and non-parametric descriptive statistics. Results. In stage I and II anxiety scores were higher in comparison to stage IV disease patients (37.5 vs 14.5, p<0.05), but depression was more pronounced (6 vs 2.5, p<0.05) in IV stage. There are statistically significant differences in all segments of quality of life between patients that are in I and II stage and patients in IV stage of the disease. The global quality of life was significantly worse for patients in the IV stage (33.5 vs 83), the symptomatology is more pronounced (78.5 vs 0) and the functioning was significantly worse (31 vs 85) in relation to patients at the I and II stages (p<0.01) for all segments of quality of life. Conclusion. Anxiety and quality of life decrease, while depression increases with the stage of melanoma. The need for adequate social and family support as well as psychological assistance in order to achieve better coping with illness is necessary in patients with melanoma. Further studies are needed for monitoring of anxiety, depression and quality of life from the moment of diagnosis of the disease over time, as well as the impact of new treatment modalities on these parameters.

Key words: melanoma, depression, anxiety, quality of life, psychological instrument.
Apstrakt

Uvod / Cilj. Nedavna istaživanja su pokazala značajnu korelaciju između melanoma i kvaliteta života, kao i anksioznosti i depresije kod ovih pacijenata. U prognozi melanoma, najvažnija je faza u kojoj je dijagnostikovan. Cilj naše studije bila je analiza kvalitet života, anksioznosti i depresije kod pacijenata sa dijagnozom melanoma u različitim stadijumima bolesti. Metode. U našoj studiji preseka su bili uključeni pacijenati dijagnostikovani i lečeni u Klinici za kože i polne bolesti Vojnomedicinske akademije tokom perioda od oktobra do decembra 2015. godine, ukupno 40 pacijenata sa dijagnozom melanoma. 20 ispitanika je bilo u I i II stadijumu (lokalizovane bolesti) i 20 ispitanika u IV fazi (udaljene metastaze). U našem istraživanju koristili smo upitnik za procenu kvalitet života obolelih od melanoma Evropskog udruženja za istraživanje i terapiju kancera (EORTC QLQ 30), Bekov upitnik o anksioznosti (BAI) i Bekov upitnik o depresiji (BDI). Statistička analiza je uključila parametarsku i neparametarsku opštu statistiku. Rezultati. U I i II stadijumu anksioznost je bila veća u poređenju sa pacijentima u IV stadijumu bolesti (37,5 naspram 14,5; p <0,05), ali je depresija bila izraženija (6 naspram 2,5; p <0,05) u IV stadijumu. Postoje statistički značajne razlike u svim segmentima kvaliteta života između pacijenata koji su bili u I i II stadijumu i pacijenata u IV stadijumu bolesti. Ukupan kvalitet života je značajno bio lošiji kod pacijenata u IV stadijumu (33,5 naspram 83), simptomatologija je izraženija (78,5 naspram 0), a funkcionisanje značajno lošije (31 naspram 85) u odnosu na pacijente u I i II stadijumu (p <0,01) za sve segmente kvaliteta života. Zaključak. Anksioznost i kvalitet života opadaju, dok depresivni simptomi rastu sa stadijumom napredovanja melanoma. Potreba za adekvatnom socijalnom i porodičnom podrškom, kao i psihološku pomoć kako bi se što bolje podnела bolest je neophodna kod pacijenata sa melanomom. Dodatna istraživanja su potrebna za praćenje anksioznosti, depresije i kvaliteta života od trenutka dijagnoze bolesti tokom vremena, kao i uticaja novih modaliteta lečenja na sve ove parametre.

Ključne reči: melanom, depresija, anksioznost, kvalitet života, psihološki instrumenti.
Introduction

The incidence of melanoma is increasing worldwide, especially in fair-skinned over-exposed white populations. Incidence rate of melanoma in Europe is currently 10-25 per 100,000 inhabitants. The incidence is continually increasing at all ages and it is predicted that this trend will further continue. The most significant increase in incidence was detected in men over the age of 60 (1, 2).

In prognosis of melanoma, the most important is the stage in which it is diagnosed. If diagnosed occurred at an early stage, at stage I, the five-year survival rate is 97% for Ia and 92% for Ib stadium. In the IIa stage the five-year survival rate is 81% and in IIc 53%, while in the IV stage, is low - 15% (3).

In recent years, due to important aspect of cancer research, new forms of biological therapy were implemented which had the consequence that the survival of patients with melanoma was increasing. However, it is not just about the length of life, but also about the quality of life (QoL) of patients with melanoma. There are a few studies dealing with the evaluation of the long-term effect of melanoma on the quality of life and the psychic status of patients with melanoma. In the study carried out in the Netherlands was shown that the quality of life of patients with melanoma was not significantly different from the quality of life of the general population (4-6).

According to some studies, about 30% of patients with melanoma suffered from significant distress, especially women and youth. Depression is growing with the stage of the disease and it is higher in later stages of disease, approximately about 18-44% in later stages of the diseased. The highest level of anxiety is registered in the period of diagnosis and later decreases (7-10).

The aim of our study was to analyze the quality of life, anxiety and depression of patients with melanoma at different stages of the disease.

Methods

Cross-sectional study was conducted in 40 consecutive patients diagnosed with melanoma and treated at the Department of Dermatology and Venerology Military Medical Academy Belgrade, during the two-month period from October to November 2015. Although in the Department of Dermatology and Venerology are hospitalized about 140 patients with melanoma on the average every year, in our pilot study were included only patients who were diagnosed and treated during the period when the study was conducted. In our study were included only patients who volunteered to participate in our study and all of them signed an informed consent. The research was approved by the Ethics committee of the Military Medical Academy Belgrade and was carried out according to all the regulations of the Helsinki Declaration. Patients were divided in two groups, first group consisted of 20 patients in stage I and II (localized disease) and second group consisted of 20 patients in the stage IV (with distant metastases).

Psychological instruments
Assessing of quality of life (QoL) has been done using the validated cancer-specific questionnaire - **European Organization for Research and Treatment of Cancer (EORTC) Quality of life Questionary C30**. The EORTC QLQ-C30 is a patient self-rating questionnaire consisting of three symptom scales (fatigue, nausea/vomiting, pain), five function scales (physical, role, social, emotional, cognitive functions), and five single items assessing symptoms such as dyspnoea, insomnia, appetite loss, constipation and diarrhea. Basing on those scores we can calculate a global health status/QoL score. All scores of the QLQ-C30 were transformed linearly so that all scales vary from 0 to 100 in a row with the EORTC scoring manual. Patients give their answers ranked on a 4-point scale (from 1 in general to "4" very much), barring the GH/QoL scale of the EORTC QLQ-C30, which has a 7-point scale (from 1 “very poor” to 7 “excellent”). A linear transformation is used to standardize the raw score, so that overall scores range from 0 to 100. For the EORTC QLQ-C30, a higher score in GH/QoL or a functioning scale represents a better level of quality of life and functioning; a higher score in a symptom scale represents a worse level of symptoms (11). Previously, the licenses for the use of the questionnaire by EORTC were set out.

**Beck’s Anxiety Inventory (BAI)** is an inventory for self-assessment of the severity of various symptoms related to anxiety in terms of how he felt last week. BAI contains 21 multiple-choice items (Beck et al., 1988). The scale is intended for people over the age of 17 years. For each symptom, four options are offered, and the respondent should choose the one that best describes his condition. The response options are from not at all over mild and moderate to severe. The minimum score is 0, and the maximum score is 63 (Beck et al., 1988). It is considered that the score above 10 at BAI has indicated a mild anxiety, and the score above 19 shows moderate anxiety and a score above 30 indicates severe anxiety (Hoyer, Becker, Neumar, Soeder, &Margraf, 2000) (12).

**Beck Depression Inventory (BDI)**, created by Aaron T. Beck, is one of the most appropriate psychometric tests for measuring the severity of depression. BDI consists of 21 questions for self-reported disability. BDI showed high levels of internal consistency (alpha coefficient) ranging from 0.73 to 0.95 in psychiatric populations, as has been confirmed so far in many studies (see Beck, Steer, Garbin, 1988). BDI measures the general depression syndrome consisting of three correlated subscales (eg See Tanaka & Huba, 1984 or Catanzaro, 1994), while for each question and statement, a response of 0 (neutral) to 3 (the most difficult) can be given. Summing the items yields a total score ranging from 0 to 63 (Beck et al., 1988). It is considered that the score above 10 at BDI indicates a mild depression, and the score above 19 shows moderate depression, and a score above 30 indicates a serious depression (13, 14).

**Statistical analysis**

Statistical analysis included parametric and non-parametric descriptive statistics, depending on the nature of data. Data analysis was carried out using IBM SPSS (Statistical Package for the Social Sciences) software version 20.0. For the normal distribution of all numerical parameters and scores Kolmogorov-Smirnov test was used. We got the results showing that in all monitored and calculated parameters and scores there was normal distribution (z was less than 1.96, and p<0.05), so that it was possible to apply parametric methods in further analysis.
Results

The average age of the patients in the first group was 54.8±13.76 years and 62.85±11.47 in the second group (p>0.05). Men were also dominated by both groups (60% in the first and 70% in the second group). The presence of some chronic somatic diseases such as hypertension, diabetes, hyperlipidemia and the like, reported 35% patients in the first group and 50% patients in the second group. There were not statistical differences between groups in age, gender and presence of chronic somatic diseases (Table 1).

In stage I and II anxiety scores were higher in comparison to stage IV disease patients (37.5 vs 14.5, p<0.05), but depressive symptoms were more pronounced (6 vs 2.5, p<0.05) in IV stage (Graph 1).

There were statistically significant differences in all segments of quality of life between patients that were in I and II stage and patients in IV stage of the disease. The global quality of life was significantly worse for patients in the IV stage (33.5 vs 83), the symptomatology was more pronounced (78.5 vs 0) and the functioning was significantly worse (31 vs 85) in relation to patients at the I and II stages (p<0.01 for all segments of quality of life) (Graph 1).

Discussion

Recent investigations have established a significant correlation between melanoma stages and quality of life, as well as anxiety and depression symptoms in these patients. Although, some researchers were studying the stages of melanoma, anxiety and depression, the quality of life of patients in our country were not analyzed.

In our investigation, we found that patients in the I and II stage of melanoma (localized disease) had a severe level of anxiety unlike patients in the IV stage of melanoma (distant metastases) with mild anxiety, and our results are in accordance with other investigations. When a patient faces the diagnosis of melanoma, his/her knowledge of malignant disease and its’ unpredictable prognosis, even when the disease is detected at an early stage, has the consequence of the appearance of fear, anxiety and insecurity. Intensive regular follow-up procedures with radiological and laboratory exams during the first three years can contribute to increase in anxiety. Many studies have shown that anxiety is higher in earlier melanoma stages and that it later slowly decreases. Adaptation to the diagnosis of melanoma and coping with the diagnosis, dealing with various treatment modalities, with or without support of his/her family, friends and social environment, greatly influences the anxiety in later stages of the disease, too (15-19).

Depressive symptoms occur very rarely in earlier stages of melanoma, but, as the time passes the patients become aware of the inevitability of the outcome of the disease, regardless to the exhaustion of various modalities of treatment, exhaustion of the disease itself, progression of the disease and depressive symptoms slowly appears. Depression symptoms are in a certain extent present in most melanoma patients at stage IV of the disease, but in minimal level, and the level of depression symptoms is significantly higher than in respondents in I and II stage. Our results are in accordance with other studies, which also found that depression symptoms occur in later stages of the disease (19-21).

The global quality of life, measured by the EORTC C30 questionnaire, showed a very low level in the IV stage of the disease. In the IV stage of melanoma (distant
metastases), the global quality of life depends on the type of applied therapy, its side effects and the prevalence and localization of metastases. Our results are in accordance with other studies where the global quality of life is low in the IV stage of the disease, too (22-24). The low level of global quality of life in the IV stage of melanoma was more than twice lower than in the I and II stage of the disease. We could explain our results with the fact that the overall global quality of life is decreasing during the time, because of the progression of the malignant disease that affected the complication of everyday functioning, including some financial difficulties and symptomatology, considered primarily fatigue, nausea and vomiting, pain, dyspnoea, insomnia, appetite loss, constipation, diarrhea etc. (24-29). The data obtained in our study are in accordance with the data obtained in other surveys that support the declining functioning of melanoma as well as the global quality of life as the symptomology grows (30-32).

In our investigation, we found that in the I and II stage of melanoma severe level of anxiety was result of uncertainty and fear of disease expansion which the patient was faced for the first time. In these stages of melanoma there was not influence on the quality of life which stayed uncompromised and high, including low level of depressive symptoms. With progression of melanoma, situation was drastically changed. When metastasis was already occurred, anxiety fell down because patients have been yet accepted the disease itself and the current condition. Depressive symptoms slowly increased from the stage I and II to stage IV because patients slowly became aware of the progression and inevitability of the outcome of the disease. In addition, in the IV stage of melanoma functioning in all segments including physical, role, emotional, cognitive and social functioning was compromised, which also affected the increase of depressive symptoms.

Our findings are very important in clinical practice, because they could help in planning the psycho-psychiatric support in every stage of melanoma.

**Conclusion**

The results of our research show that anxiety is highest in the period of diagnosing of melanoma and subsequently decreases, while depressive symptoms are more pronounced in later stages. Also, the quality of life of patients with melanoma is significantly worse in IV stage of melanoma than in the first two stages. Because of that, the need for adequate social and family support as well as psychological help in order to achieve better coping with illness is necessary. Learning techniques to overcome fear and stress would help in better functioning of all affected, regardless of the stage of the disease. The most severe cases of anxiety and depression, in addition to psychotherapeutic interventions should also be considered medication therapy. The need for a multidisciplinary team that would be involved in monitoring the patient from the moment of the establishing the diagnosis of melanoma is of exceptional importance and include dermatologist, surgeon, radiotherapist, neurologist and psychiatrist, psychologist, psychotherapist.

**Limitation of the study**

The group of 40 patients included in our pilot cross-sectional study was small, and requires further investigations. Further investigation could be focused on determining gender differences in the quality of life, depression and anxiety in patients treated in all stages of melanoma.
REFERENCES


### Table 1

<table>
<thead>
<tr>
<th>Variables</th>
<th>I and II stage (Localized disease)</th>
<th>IV stage (Distant metastases)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age X±SD</td>
<td>54.65±13.76</td>
<td>62.85±11.48</td>
<td>ns</td>
</tr>
<tr>
<td>Gender (male) %</td>
<td>60</td>
<td>70</td>
<td>ns</td>
</tr>
<tr>
<td>Chronic somatic diseases (presence) %</td>
<td>35</td>
<td>50</td>
<td>ns</td>
</tr>
</tbody>
</table>

Ns- p > 0.05

### Table 2

**EORTC QLQ C30, BDI and BAI in the melanoma patients**

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>I and II stage (Localized disease)</th>
<th>IV stage (Distant metastases)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>BAI</td>
<td>37.5</td>
<td>14.5</td>
<td>0.05*</td>
</tr>
<tr>
<td>BDI</td>
<td>2.5</td>
<td>6</td>
<td>0.05*</td>
</tr>
<tr>
<td>GLOBAL QOL</td>
<td>83</td>
<td>33.5</td>
<td>0.01**</td>
</tr>
<tr>
<td>SYMTOMTOLOGY</td>
<td>0</td>
<td>78.5</td>
<td>0.01**</td>
</tr>
<tr>
<td>FUNCTIONING</td>
<td>85</td>
<td>31</td>
<td>0.01**</td>
</tr>
</tbody>
</table>

BAI- Beck Anxiety Inventory  
BDI- Beck Depression Inventory  
EORTC-QLQ C30- European Organization for Research and Treatment of Cancer (EORTC) Quality of life Questionary C30  
**p < 0.01  
*p < 0.05
Graph 1

BDI and BAI in the melanoma patients (means)

Graph 2

EORTC QOL C30 in the melanoma patients (means)
Graph 3

EORTC QOL C30 in the melanoma patients (median)

Graph 4

BDI and BAI in the melanoma patients (median)

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