Quality of life among ovarian cancer survivors in Haji Adam Malik General Hospital Medan, Indonesia

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Abstrak

Latar belakang*: Kanker ovarium memiliki angka mortalitas yang cukup tinggi dikarenakan gejalanya yang tidak spesifik, sering ditemukan pada stadium lanjut, dan belum adanya metode deteksi dini yang sudah terbukti. Untuk menilai keberhasilan terapi penyintas kanker ovarium, tidak hanya dinilai dari aspek klinis tetapi juga dinilai dari kualitas hidup penyintas kanker ovarium yang penilaiannya berdasarkan skala fungsional dan skala gejala dalam kuesioner EORTC QLQ C30 dan EORTC QLQ OV28.*

Metode: *Penelitian ini menggunakan desain penelitian cross sectional, menggunakan data primer dari hasil wawancara dengan kuesioner EORTC QLQ C30 dan EORTC QLQ OV28 serta data sekunder yang berasal dari rekam medik di RSUP Haji Adam Malik Medan tahun 2017 - 2018. Sampel penelitian dipilih dengan metode total sampling dari seluruh data rekam medik yang memenuhi kriteria penelitian.*

Hasil: *Hasil penelitian ini didapatkan kualitas hidup global penyintas kanker ovarium 89.36% adalah baik, dan 10.64% adalah sedang serta tidak ada yang memiliki kualitas hidup buruk. Namun, didapatkan adanya gangguan pada skala fungsional berupa: fungsi emosional, fungsi kognitif, fungsi seksual, dan sikap terhadap penyakit, serta adanya permasalahan pada skala gejala berupa: kelelahan, nyeri, neuropati perifer, dan gejala menopause. Didapatkan juga tidak ada hubungan karakteristik usia, jenis histopatologis, stadium, lama terapi dengan kualitas hidup penyintas kanker ovarium, namun terdapat hubungan antara jenis terapi dengan kualitas hidup penyintas kanker ovarium.*

Kesimpulan: *Kualitas hidup penyintas kanker ovarium secara global adalah baik.* ***(Health Science Journal of Indonesia 2020;11(2):133-9)***

Kata kunci: *Kualitas hidup, penyintas kanker ovarium, EORTC QLQ C-30, EORTC QLQ OV-28*

Abstract

Background: Ovarian cancer has a high mortality rate due to nonspecific symptoms, often found at an advanced stage, and also the absence of proven early detection methods. To assess the success of ovarian cancer survivors therapy, it is not only assessed from the clinical aspect but also from the quality of life of ovarian cancer survivors which is based on the functional and symptom scale in the EORTC QLQ C30 and EORTC QLQ OV28 questionnaires.

Methods: This study used a cross sectional study design, using primary data from interviews with the survivors based on the questionnaire EORTC QLQ C30 and EORTC QLQ OV28 as well as secondary data derived from medical records at Haji Adam Malik General Hospital Medan in 2017 - 2018. The research sample was used with a total sampling method from all medical record data that fulfill the research criteria.

Result: The quality of life of ovarian cancer survivors is generally good (89.36%), meanwhile the rest is moderate (10.64%) without the poor quality of life. However, there are disorders on the functional scale in the form of emotional function, cognitive function, sexual function, and attitude toward disease. Likewise on the scale of symptoms, there are problems including: fatigue, pain, peripheral neuropathy, and menopausal symptoms.

Conclusion: The quality of life of ovarian cancer survivors globally is good. ***(Health Science Journal of Indonesia 2020;11(2):133-9)***

Keywords: Quality of life, ovarian cancer survivors, EORTC QLQ C-30, EORTC QLQ OV-28

Ovarian cancer is one of the ten most common cancer suffered by women in Indonesia.[1] According to Globocan 2018, the incidence of ovarian cancer is 5.7 per 100.000 women globally, and the mortality rate is 4.0 per 100.000 women.[2] Although the incidence of ovarian cancer is not as high as those of breast and cervical cancer, the mortality rate is high as most ovarian cancer cases (60-70%) are found in late stages, thus the 5 year survival rate reaches only around 45%.[3]

The quality of life is one of the measurements to assess the outcome of therapy mainly in chronic diseases with a low possibility of recovery. The target of therapy in cancer is not to cure but to improve the quality of life.[4] According to Goncalves's research in 2014 using EORTC QLQ C30 (European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire C30) and FACT G (Functional Assessment of Cancer Therapy - General) questionnaires, the quality of life among ovarian cancer survivors in Portugal was fairly good in terms of physical, psychological and social welfare, but most of the women suffered from waist pain and problems in sexual life.[5]

As in Indonesia, Riska's research in 2017 using EORTC QLQ C30 on the quality of life of gynecological cancer patients undergoing therapy at Dharmais Hospital and Gatot Subroto Hospital, obtained research results indicated that most of the gynecology cancer patients required a high level of quality of life on global health and functional domains. However, the quality of life in the symptom domain was quite low.[6]

The research on quality of life specifically for ovarian cancer survivors was not developed in Indonesia. So this research aims to measure the quality of life among ovarian cancer survivors in Indonesia especially in Haji Adam Malik Hospital, Medan.

METHODS

This research uses a cross-sectional design. The collecting and recording of data were carried out in July-October 2019. This research uses primary data obtained from European Organization of Research and Treatment of Cancer Quality of Life Q-C30 (EORTC QLQ C30) and Quality of Life Questionnaire Ovary Cancer Module (EORTC QLQ OV28) by interviewing the ovarian cancer survivors as well as secondary data to identify the characteristics of ovarian cancer survivors written in medical records at Haji Adam Malik General Hospital, Medan City in 2017-2018.

The EORTC QLQ C30 questionnaire contains 30 questions consisting of 3 scales, the global quality of life, functional and symptom scales. The questionnaire was previously tested in validity and reliability by Rini Noviyani et al.[7] Meanwhile, EORTC QLQ OV28 questionnaire contains 28 questions consisting of 2 scales, functional and symptom scales with tested validity and reliability by the author on 30 respondents in Universitas Sumatera Utara Hospital (count r > table r; 0.361 for 30 respondents with Alpha Cronbach value > 0.7).

Total sampling was used to determine the samples and 47 respondents were selected after meeting the inclusion and exclusion criteria. The inclusion criteria are: 1) Women diagnosed with ovarian cancer have completed primary treatment (surgery, chemotherapy), all stages of ovarian cancer, and all types of ovarian cancer in 2017-2018. 2) From the evaluation in 2019, there was no recurrence. The exclusion criteria is: 1) Survivors of ovarian cancer that can not be contacted by researchers due to data in the form of telephone numbers and addresses that are incomplete in the medical record.

There were two variables used in this research, dependent and independent variables. The dependent variable was the quality of life and the independent variables were age, histopathological results, stage of cancer, type of therapy, and duration of therapy. Quality of Life of Ovarian Cancer Survivors, age, stage of cancer, and duration of therapy variables have an ordinal scale, while histopathological result and type of therapy variables have a nominal scale.
This research had been approved by The Ethical Commission of Medical Faculty, Universitas Sumatera Utara with a letter number 13/TGL/KEPK FK USU- RSUP HAM/2019. The data were analyzed in univariate, bivariate and multivariate tests. Bivariate analysis was by spearman correlation test and the multivariate analysis was by logistic regression test. Bivariate analysis is used to determine whether there is a relationship between ordinal and nominal variables with the quality of life of ovarian cancer survivors. Meanwhile, multivariate analysis was used to find which nominal variables influenced the quality of life of ovarian cancer survivors.

RESULTS

The population in this study was ovarian cancer survivors in Haji Adam Malik General Hospital in 2017-2018, totaling 78 people. However, only 52

people had complete medical record data and of those 52 people only 47 people want to be interviewed, so the number of samples in this study totaled 47 ovarian cancer survivors.

Table 1. Distribution of characteristics of ovarian cancer survivors in Haji Adam Malik Hospital, Medan City in 2017-2018.

Variable	Frequencies (n = 47)	Percentages (%)
Age (Years)		
≤19	1	2.1
20-29	4	8.5
30-39	1	2.1
40-49	17	36.2
50-59	19	40.4
60-69	5	10.6
Histopathological Type		
Epithelial		
Serous adenocarcinoma	8	17.0
Mucinous cystadenocarcinoma	16	34.0
Papillary serous adenocarcinoma	6	12.8
Endometrioid carcinoma	6	12.8
Clear cell carcinoma	5	10.6
Sex Cord Stromal		
Granulosa cell carcinoma	1	2.1
Germ cell		
Teratoma	2	4.3
Yolk sac tumor	1	2.1
Borderline epithelial tumors		
Serous cystadenoma	1	2.1
Mucinous cystadenoma	1	2.1
Stage of Cancer		
I	18	38.3
II	9	19.1
III	20	42.6
IV	0	0
Type of Therapy		
Surgery only	5	12.8
Neoadjuvant Chemotherapy + Surgery + Adjuvant Chemotherapy	4	6.4
Surgery + Adjuvant Chemotherapy	36	80.9
Duration of Therapy		
≤ 3 months	5	10.6
4-7 months	41	87.2
≥ 8 months	1	2.1

From 47 ovarian cancer survivors in 2017-2018, it was found that the most age was in the age group 50-59 years (40.4%), the most histopathological type was an epithelial tumor (87.2%), the highest stage was stage III (42, 6%), the most type of therapy was in the form of surgery + adjuvant chemotherapy (80.9%), the longest duration of therapy was 4-7 months (87.2%).

Table 2. Quality of life of ovarian cancer survivors based on EORTC QLQ C30

VARIABLES	MEAN	±SD
Global Health Status/QOL	**82.44**	**14.03**
Global Health Status/QOL		
Functional Scales	**90.34**	**14.28**
Physical Functioning	93.90	5.53
Role Functioning	100	0
Emotional Functioning	83.68	16.93
Cognitive Functioning	76.95	16.86
Social Functioning	97.16	7.22
Symptom Scales/Items	**8.66**	**15.27**
Fatique	31.91	10.51
Nausea and Vomiting	1.06	4.11
Pain	20.92	15.72
Dyspnoea	4.96	11.99
Insomnia	5.67	16.03
Appetite Loss	2.17	10.77
Constipation	5.67	12.66
Diarrhoea	0.70	4.86
Financial Difficulties	4.96	11.99

On the EORTC QLQ C30 and EORTC QLQ OV28 scoring, all of the scales and single-item measures range in score from 0 to 100. A high scale score represents a higher response level. Thus a high score for a functional scale represents a high/healthy level of functioning, a high score for the global health status / QoL represents a high QoL, but a high score for a symptom scale/item represents a high level of symptomatology/problems.[14]

Table 2 shows a fairly high functional scale with an average score of 90.34 which shows that the level of functional health in terms of ovarian cancer survivors is also quite high, even the role function shows a score of 100 which proves that none of the survivors experienced any disruption in performing role functions such as doing their work, hobbies and daily activities after completing chemotherapy.

The scores of emotional and cognitive functions show a slight disturbance. In emotional function, some of the survivors complain they often feel quickly offended, and feel worried especially about recurrence. In cognitive function also some survivors say they are increasingly difficult to remember things and in terms of concentration while on the move and work.

The symptom scale in table 2 shows a score of 8.66 which means that the level of symptoms or problems experienced by survivors is low, even in the symptoms of nausea and vomiting, dyspnoea, insomnia, appetite loss, constipation, diarrhea, and financial difficulties showing very low scores. It means that most survivors no longer experience these symptoms which are mostly experienced during their chemotherapy.

The symptoms of fatigue show a high enough score (31.91). Many survivors reported that they felt tired quickly and also felt that their bodies were weak so that sometimes they had to take a break while working and doing their daily activities. Some survivors also reported pain in their bodies, especially in the former operation, waist, and joints, so that a little disturbing in their daily activities that can be seen in the pain score (20.92) in table 2 which shows a disturbance in pain symptoms.

Table 3. Distribution of global health status/ quality of life based on EORTC QLQ C30

Quality of Life	Frequency	Percentage (%)
Good	42	89.36
Moderate	5	10.64
Poor	0	0
Total	**47**	**100**

Table 3 shows the Global Health Status/Quality of Life of ovarian cancer survivors is generally good (89.36%), meanwhile the rest is moderate (10.64%) without the poor quality of life.

Table 4. Quality of life of ovarian survivors based on EORTC QLQ OV 28

VARIABLES	MEAN	±SD
Functional Scales	**59.94**	**32.54**
Body Image	84.04	16.28
Sexuality	23.94	25.16
Attitude to Disease/Treatment	71.87	16.19
Symptom Scales/Items	**16.91**	**20.14**
Abdominal/GI Symptoms	10.23	6.19
Peripheral Neuropathy	34.99	20.98
Hormonal/Menopausal Symptoms	20.57	26.52
Other Chemothrapy Side Effects	13.47	10.98
Hair Loss	5.31	14.79

Based on table 4, it can be seen that the functional scale on the EORTC QLQ OV-28 shows an average score of 59.94 which means that the functional level of health in survivors of ovarian cancer is impaired, especially in sexual function and attitudes to disease/ treatment. Many ovarian cancer survivors complain of problems in their sexual function, namely a decrease in interest in sexual intercourse, discomfort in sexual intercourse and pain during sexual intercourse because their vagina is dry during sexual activity.

Likewise on the scale of attitudes to disease/ treatment, it is also said by some survivors that their previous illnesses and treatments are weighing on them especially those concerned about the recurrence of ovarian cancer. Younger survivors often have a disturbance of body image and future perspective. They also often feel burdened about their disease prior to the high expectation about their health. This could affect their attitude to the disease and its treatment.[9]

The results obtained for the symptom scale in table 4 also have a fairly low average score (16.91) which shows that the level of symptoms or problems experienced by survivors based on EORTC QLQ OV-28 is not too problematic. This can be seen in abdominal/GI symptoms, other chemotherapy side effects, and hair loss showing very low scores which proves that most survivors no longer experience these complaints that may be experienced during therapy. However, most survivors experience peripheral neuropathy in the form of numbness, tingling, and weakness in the extremities, especially survivors who undergo chemotherapy. Survivors who did not undergo chemotherapy, did not experience peripheral neuropathy. Likewise on the scale of menopause symptoms, some survivors complain of experiencing hot flushes and night sweats.

Table 5. Bivariate analysis (Relationship between characteristics and quality of life of ovarian cancer survivors based on EORTC QLQ C30)

Variables	Quality Of Life	
	p *value*	R
Age	1.000	0.001
Type of Histopathology	0.043	0.132
Type of Treatment	0.026	0.330
Stage	0.067	0.269
Duration of Treatment	0.064	0.272

Based on Table 5 to see the relationship between the independent variable and the dependent variable, the result obtained p value 0.026 (p value < 0.05) on the type of treatment variable, and type of histopathology with p value 0.043 (p value < 0.05), which means that the type of therapy and type of histopathology have relationship with the quality of life of ovarian cancer survivors. However, there is no significant association between age, stage of cancer, duration

of therapy and the quality of life of ovarian cancer survivors because p value > 0.05.

Table 6. Multivariate analysis (Relationship between characteristics and quality of life of ovarian cancer survivors based on EORTC QLQ C30)

Variables	Quality Of Life		
	p *value*	R	R^2
Age	1.000	0.001	
Type of Histopathology	0.999	0.132	
Type of Treatment	0.026	0.330	0.215
Stage	0.067	0.269	
Duration of Treatment	0.064	0.272	

This research shows that there is no significant association between age, histopathological results, stage of cancer, duration of therapy and the quality of life of ovarian cancer survivors. However, there is a significant relationship between the type of therapy and quality of life in ovarian cancer survivors (p=0.026) with R square value of 0.215 or 21.5%, which means the types of therapy affect 21.5% on quality of life while the remaining 78.5% is influenced by other factors.

Compared to Bughwandass, the types of therapy underwent by the survivors affect their quality of life. Survivors who received surgery and chemotherapy have a lower quality of life than the survivors who only went through surgery, especially on the scale of symptoms such as fatigue, peripheral neuropathy, attitude toward disease, and financial terms. These symptoms, otherwise not found in survivors with surgical treatment alone, greatly affect the quality of life.[10]

Table 7. Type of treatment and mean global quality of life of ovarian cancer survivors

Type of Treatment	Mean Global Quality of Life	Frequency n(%)
Surgery only	96.67	5 (12.8)
Neoadjuvant Chemotherapy + Surgery + Adjuvant Chemotherapy	66.67	4 (6.4)
Surgery + Adjuvant Chemotherapy	82.23	36 (80.9)

Table 7 shows the more types of treatment obtained by survivors will make the quality of life decreases. The results showed that the highest mean quality of life was found in survivors who only received treatment only surgery and the lowest quality of life in survivors who received neoadjuvant chemotherapy + surgery + adjuvant chemotherapy.

DISCUSSION

According to the American Cancer Society, the incidence of ovarian cancer peaked in women aged 55-64 years old.[11] In Indonesia, the peak age group in gynecologic cancer especially the cervix, uterus and ovary were between 45-54 years old.[1] Over 90% malignant ovarian cancer were derived from epithelium, 5% - 6% from sex cord-stroma and 2% - 3% were germ cell tumors.[1] Currently, two-third of the patients are only diagnosed when they reach the third or fourth stage because the symptoms of ovarian cancer are not specific and there is no screening instrument with high specificity, sensitivity and cost-effectiveness.[12]

The choice of treatment is cytoreductive surgery followed by chemotherapy. The great development of advanced chemotherapy is due to the increasing number of studies on the appropriate dosage, schedule, sequence and duration of chemotherapy in ovarian cancer patients.[13] Dinkelspiel's research stated that 55.8% of ovarian cancer patients had a therapy duration of 4 – 8 months and 44.2% patients underwent a duration of ≤ 3 Months.[9]

In EORTC, high scores on the Global Quality of Life Scale and Functional Scale define the better quality of life and functionality in health term, meanwhile the higher scores obtained in symptom scale means higher of the level of symptoms or problems experienced by the survivors.[14]

The physical, role and social functions of ovarian cancer survivors are fairly good and getting improve in long-term survival. But the physical and role functions are decreasing in ≥ 70 years old patients because of the aging process.[15]

In emotional function, some of the survivors often experienced irritability and anxiety. These were related to family, especially from spouse support. Low scores on physical function, fatigue, and pain are also associated with emotional function, coupled with disturbances in body image, sexual dysfunction, fear of death and recurrence. These associations are more common found on the young survivors.[16]

Some of the survivors also stated that it was harder to remember things and to concentrate on activities due to chemotherapy induced cognitive decline, though the mechanism is still unclear.[17] More therapies received by cancer patients will cause more side effects, including fatigue. Fatigue is also influenced by emotional function and worries. Thus, it will affect

their sleep cycles.[18] In this study it was found that most survivors of ovarian cancer did not experience insomnia. However, Greimel Research reported that some survivors of ovarian cancer also experience insomnia, especially in survivors of ovarian cancer that has been long (> 10 years).[15] The survivors also experienced long-term pain in their first and second post-therapy years as a result of surgical scars and side effects of chemotherapy such as joint pain.[19]

Sexual function disturbances are also found. In pre-menopause women diagnosed with ovarian cancer and removed of both ovaries (oophorectomy), estrogen and androgen production is decreased as well as common symptoms such as hot flushes, vaginal dryness and increased sensitivity of local pain. In the latter stage, it will lead to atrophy of the vaginal wall. These factors contribute to dyspareunia or pain during intercourse. Hopkins stated that there were 5 factors affecting sexual function: disinterest in sexual relations, physical disorders, not having a partner, fatigue, and couples who are not interested in sexual intercourse.[20]

Previous chemotherapy induced peripheral neuropathy. It was proved in Buhgwandass research that showed survivors kept on suffering neuropathic symptoms even 12 years after the treatment. Chemotherapy Based on platinum compounds (cisplatin, oxaliplatin, carboplatin and analogues) damage the dorsal root ganglia of neurons by forming adduction with nuclear and mitochondrial DNA. Platinum chemotherapy tends to show similar sensory peripheral neuropathy consisting of numbness, tingling and paresthesia in the hands and/or feet. Although Carboplatin is found to be much less neurotoxic than cisplatin or oxaliplatin.[21] Surgery and chemotherapy also cause iatrogenic menopause.[10]

There is no association between age, histopathological results, stage of cancer, duration of therapy and quality of life of ovarian cancer survivors. The same results obtained in Flora's study stated that there was no significant difference between age, stage, histopathological type, and duration of therapy on the quality of life of ovarian cancer survivors. Flora's study also states that the most important role in assessing the quality of life of survivors of ovarian cancer is the functional scale, especially the physical function and the role and symptom or problems experienced by survivors after chemotherapy, and added to the psychosocial factors of the survivors.[22]

The results obtained are also in accordance with Wright's research which examined 64 women survivors of ovarian cancer with an age range of 40-83 years. The results also found no difference in the quality of life of survivors of ovarian cancer in young and old-age women, although in young women there were disturbances in emotional function and body image, this did not affect the global quality of life.[23]

Beale's research in 2009 found that there was no significant difference between the quality of life for ovarian cancer survivors diagnosed at an early stage or an advanced stage. Although side effects such as abdominal pain and symptoms are more common in the early stages, they do not affect the overall quality of life. Beale said that these side effects were associated with early-stage ovarian cancer survivors being diagnosed more often at a young age, so they have higher hopes for a full recovery.[24]

The histopathological results of ovarian cancer survivors also had no relationship with the quality of life of the survivors. In accordance with the research of Jianguang, it was stated that the histopathological results only function as a prognostic factor when diagnosed so that it does not affect the quality of life which is more influenced by psychological factors and side effects of therapy.[25]

Dienkelspiel's study also suggested that chemotherapy duration and cancer stage had no relationship with the quality of life for ovarian cancer survivors. There was no improvement in the quality of life at chemotherapy duration> 3 months and <3 months. This is because the duration of chemotherapy does not always determine the number of chemotherapy cycles a patient undergoes, so it cannot be used as a determinant of the type of therapy that the previous survivor received.[9]

However, in this study there is a significant association between type of therapy and quality of life in ovarian cancer survivors. Compared to Bughwandass, the types of therapy underwent by the survivors affect their quality of life. Survivors who received surgery and chemotherapy have a lower quality of life than the survivors who only went through surgery, especially on the scale of symptoms such as fatigue, peripheral neuropathy, attitude toward disease, and financial terms. His study also used linear regression analysis which showed that more chemotherapy cycles, recurrences, and short duration of survival were associated with higher neuropathy scores. In fact, 51% of women with ovarian cancer who received chemotherapy experienced neuropathy symptoms up to 12 years after treatment ended, and this greatly affected their quality of life.[10]

In conclusion, the quality of life of ovarian cancer survivors globally is good. There is no association between age, histopathological results, stage of cancer, duration of therapy and quality of life of ovarian cancer survivors. However, there is a significant association between type of therapy and quality of life in ovarian cancer survivors. The more types of therapy obtained by survivors, it will make the more quality of life decreases.

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