GYNAECOLOGY

Factors Correlated with Quality of Life of Gynecologic Malignancy Patients During First - Line Treatment

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ABSTRACT

Objective   To study factors correlated with quality of life (QOL) of gynecologic malignancy patients during first-line treatment

Study design   Cross-sectional analytical study

Materials and Methods Two hundred and fifty-two gynecologic malignancy patients, during first-line treatment within 6 months after diagnosis, completed the general Functional Assessment of Cancer Therapy (FACT-G) questionnaires (version 4, Thai version) in assessment of QOL. Univariate and multivariate linear regression analysis were used.

Results   In univariate analysis, patients with endometrial cancer, early stage, surgery and single modality of treatment had significantly higher total FACT-G percentage score. From multivariate analysis, early stage and single treatment were the two factors that still correlated with higher total FACT-G percentage score.

Conclusion   Higher QOL score of gynecologic malignancy patients during first-line treatment correlated with early stage of disease and single modality of treatment.

Keywords: gynecologic malignancy patient, quality of life (QOL), functional assessment of cancer therapy-general (FACT-G), first-line treatment

Introduction

Nowadays, the incidence of cancer is increasing. Data from Ramathibodi Cancer Registry in the year 2005 revealed that gynecologic malignancy including carcinomas of cervix, ovary and uterus were in top ten cancers among women.[1] This fact correlated well with the statistic from the Ministry of Public Health. Hence, gynecologic malignancies are the important problems of Thai women.[2]

New technologies in gynecologic malignancies screening have been developed, so many patients could be diagnosed in earlier stages. The diagnosis of cancer has a great impact on the patients and their societies. Treatments are invasive. The illnesses and treatments cause changes in life-style. Patients are often bewildered and overwhelmed, both physically and emotionally. Cancer patients are likely to have significant problems. Their psychological

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and medical problems are numerous and unique.

The importance of psychological aspects of cancer care is becoming increasing by a rising number of long-term survivors and the diversity of treatment options. Studies have shown that surgery, radiation therapy and chemotherapy for gynecologic malignancies can have a significant impact on health-related quality of life (QOL).[3-7]

QOL is multidimensional and has been defined as a state of physical, mental, and social well-being.[8] In this study we utilized the following definition of QOL adapted from Cella and colleagues. Health-related quality of life refers to the extent to which one's usual or expected physical, emotional, social and functional well-being are affected by a medical condition or its treatment.[9] One of the most frequently used for quality of life measurement tools is the Functional Assessment of Cancer Therapy (FACT) scale. It consists of a general form, FACT-G, evaluating physical, functional, social, and emotional well-being. The questionnaire is easy to understand and can be completed in a short period of time. This tool has been validated in a number of clinical trials and has been translated into many languages.[10]

The English-language version of the FACT-G (Version 4) questionnaire was translated into Thai-language using and iterative forward-backward translation process. The reliability and validity of its Thai version was studied. The finding of this study indicate that the Thai version of the Functional Assessment of Cancer Therapy-General (FACT-G) (see Appendix) is a reliable and valid measure of quality of life in cancer patients and can be used in clinical trials and studies of outcomes research in oncology.[11]

We are very concerned on the impact of being diagnosed as having cancer and realized the importance of quality of life during receiving the treatment. The purpose of this study was to identify the factors that correlated with quality of life of gynecologic malignancy patients during first-line treatment in Ramathibodi Hospital. The identification of these factors could lead to the improvement of quality of life of gynecologic malignancy patients which usually suffer during treatment.

Materials and Methods
Patients

Patients with newly diagnosed gynecologic malignancy at Gynecologic Oncology unit at Ramathibodi Hospital, between March 2006 to May 2007 were recruited into the study. These included carcinomas of cervix, ovary, endometrium, uterus and gestational trophoblastic neoplasia. The eligibility criteria were they 1) could read and speak Thai; 2) could give informed consent; 3) were not so weak that completing the questionnaires would be a burden; 4) were not impaired cognitively with overt psychosis, major depression or delirium. This study involved no intervention and there was no risk to the patients participating in the study. The sample size was calculated based on the previous studied from Brigitte E., et al.[3]

The QOL was studied in gynecologic malignancy patients once during the period of first-line treatment (within six weeks for patients who receiving surgery/ radiation and within six months for patients who receiving chemotherapy). This one-time assessment of QOL based on our pilot study showing that the QOL scores randomized at anytime during the period of first-line treatment were not significantly different.

Instruments

The following instruments were used: 1) a sociodemographic data sheet included questions regarding the diagnosis, stage of disease, age, treatment options, marital status, parity, occupation, educational background, income and availability of help at home; 2) the Thai version of the Functional Assessment of Cancer Therapy-General (FACT-G). The FACT-G (version 4) is a 27-item self-reporting QOL measure developed and validated among cancer patients for using in clinical trials.[4] It consists of four subscales measuring physical well-being (PWB), social/family well-being (SFWB), emotional well-being (EWB) and functional well-being (FWB). The FACT-G can be self-administered easily completed in 15-20 minutes. Patients were asked to

rate themselves on how they feel today and during the previous 7 days. Each subscale produces a score that can be aggregated into one total score. The highest score is one hundred and eight. There is still no definite cutoff point determining what the high score is. But a higher score indicated better QOL.[3]

Statistical Analysis

Descriptive statistic was used to describe study factors. Mean (SD) or median (range) were used to described the continuous data and frequency (percentage) was used for categorical data.

The scoring in each subscale of the questionnaires was sum to total FACT-G score and calculated to the total FACT-G percentage score.

The statistical analysis was carried out using the STATA program. Linear regression analyses, univariate and multivariate, were used to identify factors that associated with total FACT-G percentage score. A P-value of < 0.05 was considered statistically significant.

Results

The total of 252 gynecologic malignancy patients, during first-line treatment, were seen during the period of recruitment, all agreed to participate in the study.

The study factors are shown in Table 1. The mean age of study patients was 50.01 years (SD= 11.6). The majority of study patients were cervical cancer, n = 145 (57.54%) that correlated with the data from Ramathibodi Cancer Registry.[1] One hundred and thirty three patients (52.78%) were in early stage of disease (stage I & II) and 119 (47.23%) were in advanced stage (stage III & IV). Combined modalities were the most common treatment (n = 195, 77.38%), of which radiation combined with chemotherapy were the most common treatment (n = 105, 41.67%). The rest (n = 57, 22.62%) was treated by single modality, of which surgery was the most common (n = 32, 12.70%).

With regards to the marital status, 159 patients (63.10%) were married, 45 (17.86%), 29 (11.51%) and 19 (7.54%) were widowed, single and divorced

respectively. The number of nulliparous (n = 35, 13.89%) slightly exceed the number of single patients (n = 29, 11.51%). Housewife is the most common occupation (n = 89, 35.32%). The less common are government officer, employee and business owner respectively.

The majority of educational background of the study patients were higher than high school (n = 147, 58.33%). Forty two percent of the patients had more than 15,000 Baht of income per month (average = 10,000 Baht). Even though the majority of the study patients were married (n = 159, 63.10%), the principal care giver was their husband in only 34.92%.

Two hundred and forty-two patients completed all 27-item questionnaires. Ten patients (3.97%) chose not to answer item GS7, in the social/family well-being subscale, "I am satisfied with my sex life".

Univariate linear regression analysis was used to assess factors associated with total FACT-G percentage score (Table 2). Total FACT-G percentage score results were higher in patients with a diagnosis of endometrial cancer (P < 0.01), patients who had an early stage of diseases (P < 0.01), patients who were treated with surgery alone (P < 0.01) and patients who were treated with single modality (P < 0.01). The remaining factors were not associated with FACT-G percentage score.

From multivariate linear regression analysis (Table 3), single modality of treatment and early stage of disease were still statistically significant correlated with the higher total FACT-G percentage score.

Table 1. Study factors

Factors	N (%)
- Age (years) mean = 50 years	
< 50	117 (46.43)
> 50	135 (53.57)
- Diagnosis	
Cervical cancer	145 (57.54)
Ovarian cancer	66 (26.19)
Endometrial cancer	25 (9.92)
Uterine cancer	5 (1.98)
Gestational trophoblastic neoplasia	11 (4.37)
Factors	**N (%)**
- Stage of disease	
Stage 1	60 (23.81)
Stage 2	73 (28.97)
Stage 3	96 (38.10)
Stage 4	23 (9.13)
- Treatment	
Surgery	32 (12.70)
Radiation	16 (6.35)
Chemotherapy	9 (3.57)
Surgery + Chemotherapy	73 (28.97)
Surgery + Radiation	3 (1.19)
Radiation + Chemotherapy	105 (41.67)
Surgery + Radiation + Chemotherapy	14 (5.56)
Factors	**N (%)**
- Marital status	
Single	29 (11.51)
Married	159 (63.10)
Widowed	45 (17.86)
Divorced	19 (7.54)
- Parity	
Nulliparous	35 (13.89)
Parous	217 (86.11)
- Occupation	
Housewife	89 (35.32)
Government officer	83 (32.94)
Business owner	38 (15.08)
Employee	42 (16.66)

Factors	N (%)
- Educational background	
None	23 (9.13)
Grade 6	66 (26.19)
Grade 9	16 (6.35)
High school	57 (22.62)
Bachelor	90 (35.71)
- Income per month (Baht)	
< 5000	30 (11.90)
5000 – 10,000	70 (27.78)
10,001 – 15,000	47 (18.65)
15,001 – 20,000	54 (21.43)
20,001 – 25,000	48 (19.05)
> 25,000	3 (1.19)

Factors	N (%)
- Principal care giver	
Husband	88 (34.92)
Offspring	124 (49.21)
Others	40 (15.87)

Table 2. Factors correlated with total FACT-G percentage score using a univariate linear regression model

Factors	Mean (SD)	Coefficient (95% CI)	P – value
- Age (years)			
> 50	83.07 (10.68)	1.35 (-1.65,4.35)	0.376
< 50	81.72 (13.48)	Reference group	
- Diagnosis			
Ovarian cancer	81.92 (10.46)	0.72 (-2.75,4.20)	0.683
Endometrial cancer	89.30 (11.74)	8.10 (3.03,13.17)	< 0.01
Uterine cancer	82.41 (16.46)	1.21 (-9.44,11.86)	0.824
Gestational trophoblastic neoplasia	86.45 (11.74)	5.25 (-2.08,12.57)	0.159
Cervical cancer	81.20 (12.37)	Reference group	
Factors	**Mean (SD)**	**Coefficient (95% CI)**	**P – value**
- Staging			
Advance stage (Stage3,4)	76.75 (11.96)	-10.79 (-13.48,-8.11)	< 0.01
Early stage (Stage 1,2)	87.54 (9.66)	Reference group	
- Treatment (I)			
Non-surgery	80.46 (12.45)	-4.11 (-7.07,-1.16)	< 0.01

Factors	Mean (SD)	Coefficient (95% CI)	P – value
Surgery	84.57 (11.30)	Reference group	
- Treatment (II)			
Combined	79.96 (11.24)	-10.99 (-14.30,-7.68)	< 0.01
Single	90.95 (10.90)	Reference group	
- Marital status			
Others	81.01 (11.46)	-2.28 (-5.37,0.82)	0.149
Married	83.29 (12.36)	Reference group	

Factors	Mean (SD)	Coefficient (95% CI)	P – value
- Parity			
Parous	82.50 (11.87)	0.35 (-3.98,4.69)	0.873
Nulliparous	82.14 (13.35)	Reference group	
- Occupation			
Others	82.25 (13.19)	-0.57 (-3.70,2.56)	0.722
Housewife	82.81 (9.71)	Reference group	
- Educational background			
$\geq$ High school	82.83 (13.23)	0.91 (-2.12,3.95)	0.554
< High school	81.91 (10.25)	Reference group	
- Income per month (Baht)			
> 10,000	82.41 (13.04)	-0.09 (-3.15,2.98)	0.955
$\leq$ 10,000	82.50 (10.45)	Reference group	

Factors	Mean (SD)	Coefficient (95% CI)	P – value
- Principal care giver			
Others	82.19 (11.86)	-0.73 (-3.88,2.41)	0.647
Husband	82.92 (12.48)	Reference group	

Table 3. Results of multivariate linear regression analysis

Factors	Coefficient (95% CI)	SE	t - test	P - value
- Treatment				
Combined	-7.64 (-10.89,-4.39)	1.65	-4.62	< 0.01
Single	Reference group			
- Staging				
Advanced	-8.73 (-11.46,-6.01)	1.38	-6.31	< 0.01
Early	Reference group			

Discussion

This is a cross-sectional analytical study on factors correlated with quality of life of gynecologic malignancy patients during the period of first-line treatment. We used the questionnaires of FACT-G (version 4) which have been thoroughly evaluated, with confirmed validity and reliability worldwide.[9-11]

This study showed that it is feasible to conduct quality of life measurements in gynecologic malignancy patients. It took our patients approximately 15-20 minutes to complete the FACT-G and demographic questionnaires. This length of time is usually available while the patients were waiting for the treatments or consultations.

In this study, the overall total FACT-G percentage score was high, more than eighty percent, which reflect that our study patients had rather good QOL. For the fact that the single modality of treatment and the early stage of disease were only two independent factors that showed high correlation with QOL scores from multivariate analysis (P-value < 0.01), the diagnosis of endometrial cancer would probably correlate with QOL scores in univariate analysis because most of them were in stage I and cell type was not aggressive, which needed only surgery alone. Surgery itself was not the independent factor for good QOL scores, but it is actually a subset of single modality treatment which was the independent factor.

Patients who were diagnosed in early stage of disease had better QOL scores. Patients in these groups did not have medical diseases or other complications of advanced stage of disease such as ascites, pleural effusion or distant metastasis, and also their prognosis was better than those of advanced stage. Patients who were treated with combined modalities of treatment, suffered from side effects and had complications more than only single treatment. Type of therapy has been noted to have a significant impact on QOL.[3] However, we could not demonstrate this correlations in our study.

Since early stage of disease had a significant impact on total FACT-G percentage score, to have patients in good QOL, early detection of gynecologic cancer is highly recommended and should be enhanced, so the ratio of early stage would be increased leading to better QOL. Patients receiving several modalities of treatment, of course, deserve various kinds of adverse effects from each modality. To add other treatments to single modality should be cautious with evidence-based benefit. And the strategy to improve QOL should aim at reducing the adverse effect and psychological burden treatment. Effective support for the side effects and symptomatic management strategies while receiving treatment should be implied to improved quality of life of the patients. Informational interventions, including detailed descriptions of the treatment procedures, sensations, or side effects to be anticipated, have proved effective. Conjoint counseling offered to the patient and her partner or family may also be useful. Enrollment or recruitment of previously treated women as volunteers to contact and support one another may also improve their adjustment and coping with cancer.

There are some limitations in this study. Firstly, we used cross-sectional study. Therefore, it might not represent long term quality of life of the patients. Secondly, not a large number of patients were enrolled because of time limitation, making comparisons between different types of gynecological malignancies were difficult. In addition, other subgroup analysis were also not possible.

In conclusion, the findings of this study indicate that factors correlated with better QOL of gynecologic malignancy patients during first – line treatment are early stage of disease and single modality of treatment. Our study has also demonstrated that using FACT-G questionnaires are feasible to assess quality of life of the cancer patients.

We do hope that, our gynecologic malignancy patients will receive the best treatment and care, and have a good quality of life.

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ปัจจัยที่มีความสัมพันธ์กับคุณภาพชีวิตของผู้ป่วยมะเร็งนรีเวช ระหว่างรับการรักษาลำดับแรก

สมฤดี อุปลวัณณา, สฤกพรรณ วิไลลักษณ์, ประทักษ์ โอประเสริฐสวัสดิ์, ศศิวิมล รัตนสิริ

วัตถุประสงค์ : เพื่อศึกษาปัจจัยที่มีความสัมพันธ์กับคุณภาพชีวิตของผู้ป่วยมะเร็งนรีเวชระหว่างรับการรักษาลำดับแรก

รูปแบบการวิจัย : *Cross-sectional analytical study*

วัสดุและวิธีการ : ใช้แบบวัดคุณภาพชีวิต FACT-G version 4 ฉบับภาษาไทย สอบถามผู้ป่วยมะเร็งนรีเวชที่อยู่ในช่วงระหว่างการรักษาลำดับแรก ภายใน 6 เดือนหลังการวินิจฉัยที่โรงพยาบาลรามาธิบดี จำนวน 252 คน โดยคำนวณคะแนนเป็นค่า total FACT-G percentage score แล้วใช้โปรแกรม STATA วิเคราะห์แบบ univariate และ multivariate linear regression model เพื่อหาปัจจัยที่มีความสัมพันธ์กับคุณภาพชีวิตของผู้ป่วยมะเร็งนรีเวช

ผลการศึกษา : เมื่อวิเคราะห์แบบ univariate ปัจจัยที่มีความสัมพันธ์กับคะแนนคุณภาพชีวิตที่สูง คือ ผู้ป่วยที่ได้รับการวินิจฉัยว่าเป็นมะเร็งเยื่อบุโพรงมดลูก, อยู่ในระยะต้น (ระยะที่ 1 และ 2), รักษาโดยการผ่าตัด และรักษาเพียงวิธีเดียว เมื่อวิเคราะห์แบบ multivariate พบว่า ปัจจัยที่ยังคงมีความสัมพันธ์กับคะแนนคุณภาพชีวิตที่สูงคือ ผู้ป่วยที่อยู่ในระยะต้น และทำการรักษาเพียงวิธีเดียว (P < 0.05)

สรุป : ปัจจัยที่มีความสัมพันธ์กับคะแนนคุณภาพชีวิตที่สูงของผู้ป่วยมะเร็งนรีเวช ที่อยู่ในช่วงระหว่างการรักษาลำดับแรกที่โรงพยาบาลรามาธิบดี คือ ผู้ป่วยที่อยู่ในระยะต้น และทำการรักษาเพียงวิธีเดียว