

## RESEARCH ARTICLE

# Quality of Life in Gestational Trophoblastic Neoplasia Patients after Treatment in Thailand

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### Abstract

**Background:** Gestational trophoblastic neoplasia (GTN) is a malignant disease which occurs in women of reproductive age. Treatment of GTN has an excellent outcome and further pregnancies can be expected. However, data concerning quality of life in these cancer survivor patients are limited. This study aimed to assess quality of life in women who were diagnosed with GTN and remission after treatment, and to determine factors that may affect quality of life status. **Materials and Methods:** This cross sectional study was conducted from July 2013 to May 2014 in the Gestational Trophoblastic Disease Clinic, King Chulalongkorn Memorial Hospital, Bangkok, Thailand. Patients who were diagnosed GTN and complete remission were recruited. Data collection was accomplished by interview with two sets of questionnaires, one general covering demographic data and the other focusing on quality of life, the fourth version of Functional Assessment of Cancer Therapy (FACT-G). Descriptive statistics were used to determine general data and quality of life scores. Students t-test and one way ANOVA were used to compare between categorical and continuous data. **Results:** Forty four patients were enrolled in this study. The overall mean quality of life score (FACT-G) was 98.2. The overall FACT-G score was not significantly correlated with age, education level, stage of disease, treatment modalities, and time interval from remission to enrollment. However, patients who needed further fertility showed significant lower FACT-G scores in the emotional well-being domain ( $p=0.02$ ). **Conclusions:** Overall quality of life scores in post-treatment gestational trophoblastic neoplasia patients are in the mild impairment range. Patients who desire fertility suffer lower quality of life in the emotional well-being domain.

**Keywords:** Gestational trophoblastic disease - treatment outcome - quality of life - FACT-G

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### Introduction

Gestational trophoblastic disease (GTD) is a group of disease caused by abnormal proliferation of trophoblasts with presentation ranging from benign manifestation of hydatidiform mole to malignant disorder of invasive mole, gestational choriocarcinoma and placental site trophoblastic tumor. The term “gestational trophoblastic neoplasia” (GTN) is applied to malignant condition of GTD (Seckl et al., 2010; Lurain, 2011). The incidence of GTD is varied around the world with higher incidence in Asia than in Europe and North America (Palmer, 1994; Ozalp and Oge, 2013). However, less studies were mentioned about incidence of GTN (Ozalp et al., 2014) since this disease can arise after any types of pregnancy (Seckl et al., 2000). Treatment of GTN is based on classification by stage and scoring system (Ng and Wong, 2003; Ngan, 2004). The treatment modalities include single agent chemotherapy, combination chemotherapy, surgery such as hysterectomy, and radiation in some cases. Overall, more than 90% of patients achieved remission from single or multimodality treatments (Seckl et al., 2010; Lurain,

2011). As most of GTN patients were in reproductive age with excellent result of treatment, further pregnancies can be expected in these patients. Nevertheless, patients often express concern related to the risk of disease recurrence and outcome of subsequent pregnancy (Kim et al., 1998; Uberti et al., 2009; Stafford et al., 2011). Although the quality of life after treatment in cancer survivors are major concern in patients’ management, there were few studies related to this issue, especially in Asian country (Wenzel et al., 2002; Cagayan and Llarena, 2010; Stafford et al., 2011).

The purpose of this study was to assess quality of life in women who were diagnosed with GTN and remission after treatment, and to determine factors that may affect quality of life status in this group of patient.

### Materials and Methods

#### *Patient selection and eligibility*

This cross-sectional study was performed during July 2013 to May 2014 in Gestational Trophoblastic Disease Clinic, Department of Obstetrics and Gynecology, King

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Chulalongkorn Memorial Hospital, Bangkok, Thailand. Patients who were diagnosed with GTN complete remission by any modality of treatments were recruited in the study. Informed consent was done before enrollment to the study. Patients were ineligible for this study if there was a diagnosis of psychiatric disorder, communication deficits, or if they had a second malignancy. The study protocol was approved by the Institutional Review Board in June 2013.

#### Data collection

After having been recruited to the study, each participant was asked to complete questionnaires. The questionnaires were composed of two sets, one was a general questionnaire consisting of demographic and clinical data, the other was quality of life survey. In this study, the fourth version of Functional Assessment of Cancer Therapy (FACT-G) quality of life questionnaire was used. It was translated into the Thai version and was proven to be reliable and valid (Ratanatharathorn et al., 2001). The Thai version of FACT-G has been granted license by the FACIT organization. The FACT-G consists of 27 questions divided in four subscales: physical well-being (PWB), social/family well-being (SFWB), emotional well-being (EWB), and functional well-being (FWB). Each subscale had its own score and all contributed to the overall FACT-G score ranging between 0-108. The higher the score indicates better the quality of life. Participants were asked to rate how they felt in the past 7 days. Patients did the questionnaires by face-to face interview by the physician who was trained to understand the question in a private environment. Patient could refuse to answer any question whenever they felt uncomfortable. Other clinical data apart from the questionnaires were collected from patients' medical records.

#### Statistical Analysis

Statistical analysis was done using SPSS program for Windows, version 17.0 (SPSS Inc., Chicago, IL, USA). Descriptive statistics were used to determine general data and quality of life scores. Shapiro Wilks W test was used to determine the data normal distribution. Student t-test and one way ANOVA were used to compare between categorical and continuous data. Pearson correlations were used for multivariate analysis,  $p < 0.05$  were taken as significant.

## Results

Between July 2013 to May 2014, 44 women who were in remission from GTN at King Chulalongkorn Memorial Hospital were recruited. Mean age of GTN patients was 31.6 years (range 16-50 years). The majority of them are in stage I (65.9%). Almost half of the patients (45.5%) were high school graduates and 37 patients (84.1%) were employed. Twenty three patients (52.3%) were multiparity and 20 (45.5%) still needed further fertility. The modality of treatments and clinical data are demonstrated in Table 1.

The mean overall quality of life score in the GTN patients was 98.18 (Range 66-107, SD. 8.9). The mean score in physical well-being (PWB), social/family

**Table 1. Characteristic of Patients**

| Variables  | No. of patients | %    |
|--|-----------------|------|
| Age  |                 |      |
| ≤40 yr   | 35              | 79.5 |
| >40 yr   | 9               | 20.5 |
| Education level  |                 |      |
| Below high school  | 10              | 22.7 |
| High school  | 20              | 45.5 |
| College  | 14              | 31.8 |
| Stage of disease   |                 |      |
| 1  | 29              | 65.9 |
| 2  | 1               | 2.3  |
| 3  | 9               | 20.5 |
| 4  | 5               | 11.4 |
| Modality of treatment                                      |                 |      |
| Dactinomycin (Act-D)                                       | 9               | 20.5 |
| Metrotexate (MTX)  | 4               | 9.09 |
| EMACO*   | 6               | 13.6 |
| Other chemotherapy (VAC=4, TP/TE=1, MTX+Act-D=5, other=2)* | 12              | 27.3 |
| Hysterectomy+chemotherapy                                  | 9               | 20.5 |
| Hysterectomy+chemotherapy+radiation                        | 4               | 9.09 |
| Employment status  |                 |      |
| Employed   | 37              | 84.1 |
| Parity   |                 |      |
| Multiparity  | 23              | 52.3 |
| Fertility desire   |                 |      |
| Yes  | 20              | 45.5 |

\*EMACO=etoposide, methotrexate, dactinomycin, cyclophosphamide, vincristine; VAC=vincristine, dactinomycin, cyclophosphamide; TP/TE=paclitaxel+cisplatin/paclitaxel+etoposide

**Table 2. FACT-G Score in GTN Patients**

| FACT-G score | N  | Minimum | Maximum | Mean | SD.  |
|--------------|----|---------|---------|------|------|
| PWB          | 44 | 21      | 28      | 26.3 | 1.84 |
| SFWB         | 44 | 12      | 28      | 24.4 | 4.76 |
| EWB          | 44 | 12      | 24      | 21.2 | 3.11 |
| FWB          | 44 | 16      | 28      | 26.2 | 2.53 |
| Total        | 44 | 66      | 107     | 98.2 | 8.98 |

**Table 4. Correlation of FACT-G Score and Fertility Desire**

| FACT-G domain | Fertility desire | Mean score (SD.) | p value |
|---------------|------------------|------------------|---------|
| PWB           | YES              | 26.3 (1.78)      | 0.87    |
|               | NO               | 26.2 (1.93)      |         |
| SWB           | YES              | 23.6 (5.25)      | 0.33    |
|               | NO               | 25.0 (4.32)      |         |
| EWB           | YES              | 19.9 (3.48)      | 0.02*   |
|               | NO               | 22.3 (2.33)      |         |
| FWB           | YES              | 25.6 (2.95)      | 0.12    |
|               | NO               | 26.8 (2.05)      |         |

well-being (SFWB), emotional well-being (EWB), and functional well-being (FWB) domain were 26.3 (Range 21-28, SD.1.84), 24.4 (Range 12-28, SD.4.76), 21.2 (Range 12-24, SD.3.11), 26.2 (Range 16-28, SD.2.53), respectively. Results of FACT-G scores are demonstrated in Table 2.

Factors associated with quality of life were analyzed by comparing each variable and overall FACT-G score. There were no statistical significant in overall FACT-G scores between age group, education level, stage of disease, treatment modality and time interval from remission

**Table 3. Analysis of Each Variable Effect on Quality of Life**

| Variables  | Overall FACT-G score | p value |
|--|----------------------|---------|
| Age  |                      |         |
| <40 yr   | 97.6                 | 0.62    |
| ≥40 yr   | 99.0                 |         |
| Education level  |                      |         |
| Below high school  | 102.0                | 0.17    |
| High school  | 95.7                 |         |
| College  | 99.1                 |         |
| Stage of disease   |                      |         |
| 1  | 98.1                 | 0.99    |
| 2  | 106.0                |         |
| 3  | 97.6                 |         |
| 4  | 98.4                 |         |
| FIGO risk score  |                      |         |
| Low risk (0-6)   | 99.9                 | 0.60    |
| High risk (≥7)   | 96.7                 |         |
| Modality of treatment                                      |                      |         |
| Dactinomycin (Act-D)                                       | 100.1                | 0.72    |
| Metrotexate (MTX)  | 98.5                 |         |
| EMACO*   | 95.0                 |         |
| Other chemotherapy (VAC=4, TP/TE=1, MTX+Act-D=5, other=2)* | 95.8                 |         |
| Hysterectomy+chemotherapy                                  | 101.2                |         |
| Hysterectomy+chemotherapy+radiation                        | 98.5                 |         |
| Time interval from remission to enrollment (yr)            |                      |         |
| <1   | 99.5                 | 0.48    |
| 1-5  | 99.8                 |         |
| >5   | 96.3                 |         |

to enrollment (Table 3). The data of fertility desire was analyzed according to each FACT-G domain. Patients who needed further fertility showed significant lower FACT-G score in emotional well-being domain ( $p=0.02$ ) (Table 4).

## Discussion

This study was conducted to evaluate quality of life in GTN patients after complete treatment. Since this disease occurs in young age group and most of this cancer patients are cured from treatment, thus, the quality of life is the major concern in these cancer survivor patients. Currently, there was limited number of studies regarding quality of life in GTN patients. (Wenzel et al., 2002; Cagayan and Llarena, 2010; Stafford et al., 2011). A study from New England Trophoblastic Disease showed GTN patients had good quality of life but a number of patients experienced reproductive concern (Wenzel et al., 2002). Another study from Philippines found that age, education level and type of treatment had impact on quality of life (Cagayan and Llarena, 2010). Recently, a study from Australia showed that GTD patients who received chemotherapy had negative effect on sexual life (Stafford et al., 2011). In this study, we used FACT-G to evaluate quality of life because this questionnaire was designed for cancer patients and was categorized in 4 dimensions. These scoring templates allow one to obtain two different overall scores in addition to each individual domain score. Moreover, it had been translated in Thai language with

reliable and valid measure (Ratanatharathorn et al., 2001). Our results showed mean FACT-G scores in GTN patients was 98.2, demonstrating that most of GTN patients were considered in mild impairment group (score range 73-108) (Fisch et al., 2003). Comparing to other studies in similar setting in Thailand, the quality of life by FACT-G scores in GTN patients are higher than other gynecologic cancer patients (Wilailak et al., 2011; Srisuttayasathien and Khemapech, 2013). Wilailak et al. reported overall FACT-G score in gynecologic cancer patient group was 82.15 (Wilailak et al., 2011). Another study about recurrent ovarian cancer showed overall FACT-G score only 76.3 (Srisuttayasathien and Khemapech, 2013). Thus, GTN patients in Thailand seem to have better quality of life than other gynecologic cancer patients. This finding may be explained by the modality of treatment in GTN. Although hysterectomy were necessary in some cases, the majority of GTN patients could be cured by chemotherapy alone which can preserve uterus and ovaries (Pongsaranantakul and Kietpeerakool, 2009; Seckl et al., 2010; Manopunya and Suprasert, 2012; Ozalp et al., 2014). Previous study (Pinar et al., 2012) showed that hysterectomy had negative effects on body image and self-esteem in women affected by gynecologic cancer. Moreover, we found almost two-third of patients are in stage I, which received less aggressive treatment and have better long term quality of life.

Although we found no significant between overall quality of life score and age, education level, stage of disease, modality of treatment. Fertility desire had significant inverse correlation with emotional well-being domain. This is compatible with previous study in hydatidiform mole patients which found that women who had children had better psychological functioning than women without children (Petersen et al., 2005). This finding suggests us to pay more attention in GTN patients who need further fertility. They should obtain comprehensive care in fertility assistance. Further research in this field may focus in this fertility desire group.

The limitations of this study are the small number of participant, due to the rare incidence of this malignant condition. Furthermore, patient interview was undertaken at outpatient GTD clinic, all of these patients were in complete remission and performed normal activity. This might influence the quality of life outcome.

In conclusion, overall quality of life score in post-treatment gestational trophoblastic neoplasia patients was in mild impairment range. Patients who desire fertility had lower quality of life score in emotional well-being domain.

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