Original Article

Symptom Management Strategies of Patients with Solid Cancer during Receiving Naïve Chemotherapy



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Abstract

OBJECTIVES: The aims of the study were to evaluate patients with solid cancer who received chemotherapy using symptom management strategies (after being educated about and informed on such strategies), and to determine parameters that influenced patients in applying symptom management strategies during chemotherapy treatment.

MATERIALS AND METHODS: This was a prospective study conducted in patients with solid cancer whom were admitted for the first chemotherapy at either Wattanosoth Hospital, Samitivej Sukhumvit Hospital, Phyathai2 Hospital, Samitivej Sriracha Hospital or Chonburi Hospital. The patients were given information regarding the side effects of chemotherapy and were given an outline of symptom management strategies by nurses. The extent of the severity of side effects of chemotherapy and the management of symptoms were assessed using both the therapy-related symptom checklist (TRSC) and the self-care method (SCM).

RESULTS: One hundred and forty nine patients with solid cancer who received the first chemotherapy were enrolled in the study. The 5 commonest side effects of chemotherapy included: hair loss (81.21%), change of taste perception (79.19%), skin change (75.17%), loss of appetite (74.50%), and difficulty sleeping (73.15%). The most common symptom management strategies used were "taking suggested medication" (27.15%), followed by "changing food and lifestyle choices" (26.62%). The patients' level of education and access to data resources on the management of side effects were independent factors that influenced patients in applying symptom management strategies.

CONCLUSON: Knowledge of the side effects of chemotherapy and self-care management is essential for patients with solid cancer who are receiving chemotherapy. A symptom management strategy is not only there to ameliorate a patient's affliction but also to optimize their quality of life during the period of chemotherapy course.

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At present, chemotherapy is the treatment of choice for patients with malignancy, as it aims to repress growth and prevent cancer spreading toward other organs, and to destroy cancer cells.[1-2] Chemotherapy treatment is given over a period of time with continuity of care. This inevitably affects the patients' quality of life particularly in patients whom experience adverse effects of chemotherapy during treatment. As a result, the patients are frequently worried, anxious, depressed and in despair.[3-4] Therefore, any treatments that can routinely lead to adverse effects/reactions need to be administered with scrupulous care. The ability to perform self-care management is essential and is an integral part of the recovery process. If the patients are able to live an effective and fulfilling life, they will feel worthy and feel accepted in society. However, the fact is that patients have to go to hospital regularly for chemotherapy, having to confront the usual side effects such as nausea, vomiting, oral/alimentary ulcer, buccal mucositis, loss of appetite, change in dietary behavior, weight loss, abnormality of bone-morrow system, bleeding tendency, fever, prone to get infection easily, immunocompromised, constipation, diarrhea, loss of body fluid and mineral balance, hair loss and skin color change, and fragile health etc.[5] These unfavorable symptoms definitely have an impact on mind and body adaptation as well as patients' social responsibilities. Therefore, if patients are able to adapt and to manage these symptoms by themselves, they could gain a better quality of life during treatment with chemotherapy.

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In addition, the theory of Dodd[6] and Chou FY, et al.[7] demonstrated the advantages of educating patients regarding chemotherapy's side effects and symptom management strategies that had a great impact on improving patient's quality of life.

Material and Methods

This was a multi-center, prospective study. Patients who fulfilled inclusion criteria were enrolled in the study as follows: 1) patients aged 18 years or above with solid cancer who received the first chemotherapy and were admitted to either Wattananosoth Hospital, Samitivej Sukhumvit Hospital, Phyathai2 Hospital, Samitivej Sriracha Hospital, or Chonburi Hospital between August 23rd, 2011 and October 1st, 2013, 2) patients who were fully conscious, 3) patients with understandable verbal communication, 4) patients who are literate in either Thai or English, and 5) patients who gave informed consent. Patients with solid cancer who required adjunctive radiation therapy were excluded. The study was approved by the ethical committee of each participating institution of study. Details of the side effects of chemotherapy and symptom self-management were imparted by a nurse.

Data collecting included the following

Demographic data e.g. sex, age, race, marital status, level of education, method of treatment before receiving chemotherapy, disease development, patient's condition and likelihood of future complications, having a caregiver, basic medication and background information was gathered. Educational levels were categorized as primary school or lower, secondary school, high school/vocational, and university or higher.

Assessment of the level of side effect severity from chemotherapy used the therapy-related symptom checklist (TRSC) form comprising 25-item symptom checklists which classified problems and the level of problem severity into five levels: level 0 = no symptom, 1 = mild, 2 = moderate, 3 = severe, 4 = very severe.

Assessment of symptom management used the self-care method (SCM) comprising identifiable symptoms, self care method and symptom alleviation.[8] Five levels of symptoms were classified: 0 = no symptom, 1 = mild, 2 = moderate, 3 = severe, 4 = very severe. Symptom management strategies were categorized into 1) by changing nutrition and lifestyle choices, 2) by adapting mental and physical behavior, 3) by biological therapy, 4) by herb therapy, 5) by using suggested medication, 6) by doing nothing and hoping circumstances will get better, and 7) by engaging in general activities.

TRSC and SCM were measured by the patients themselves on day 1 and day 3 after receiving chemotherapy and on the last day of each cycle until the first three cycles of treatment were completed.

Statistics analysis

Descriptive data were presented as absolute numbers, percentages for demographic parameters. Data from TRSC and SCM of each cycle were collected in OMERET program and Cronbach alpha at value of 0.70 was applied for accuracy of measurement.[8] One-way analysis of variance (one-way ANOVA) was used. Multivariate analysis using logistic regression analysis was performed to identify the independent factors that influenced patients in applying symptom management strategies during chemotherapy treatment. All statistical analyses were performed using SPSS for Windows, version 10.0 (Statistical Package for Social Science).

Results

A total of 149 patients who met the inclusion criteria were enrolled. There were 121 female (81.2%) and 28 male (18.80%) with an average age of 52.48 years. The educational level of the majority of patients who took part was university-level or higher (45.65%). Diagnoses of solid cancer consisted of breast cancer (57.72%), lung cancer (12.08%), gynecologic cancer (11.41%), colorectal cancer (11.41%), head and neck cancer (3.36%), gastric cancer (2.01%), and others (2.01%) respectively. Staging of cancer showed stage 1 (4.70%), stage 2 (46.98%), stage 3 (30.87%), stage 4 (17.45%). Most patients (94.63%) had a caregiver. Out of all enrolled patients, 73.15% were able to access knowledge about the disease (Table 1). There were 25 adverse symptoms that frequently developed on day 1 of receiving chemotherapy in each cycle such as hair loss (81.21%), taste change (79.19%), skin change (75.17%), loss of appetite (74.50%), and difficulty sleeping (73.15%), shown in Table 2. The level of side effect severity, measured on day 1, day 3 after receiving chemotherapy and on the last day of each cycle until the first three cycles of treatment were completed, were averaged and are shown in Figure 1. Based on the patients' perceptions, each side effect was ranged in the mild degree except hair loss that was graded in moderate severity. There were no severe or very severe symptoms reported.

Table 1: Patient's characteristics (n =149).

Characteristics	n (%)
Gender	
Female	121 (81.20)
Male	28 (18.80)
Age	
Mean	52.46
Standard deviation	22.80
Having caregiver	
Yes	
None	8 (5.37)
Channel of knowledge added	
Yes	109 (73.15)
None	40 (26.85)
Education	
Primary school or lower	37 (24.83)
Secondary school	12 (8.05)
High school / Vocational	32 (21.48)
University or higher	68 (45.65)
Stage of cancer	
Stage 1	9 (4.70)
Stage 2	70 (46.98)
Stage 3	46 (30.87)
Stage 4	24 (17.45)
Diagnosis	
Breast cancer	86 (57.72)
Lung cancer	18 (12.08)
Gynecologic cancer	17 (11.41)
Colorectal cancer	17 (11.41)
Head & Neck cancer	5 (3.36)
Gastric cancer	3 (2.01)
Other	3 (2.01)

Table 2: The occurrence of side effects on day 1 after receiving chemotherapy in each cycle.

Symptoms	n (%)
Hair loss	121 (81.21)
Taste Change	118 (79.19)
Skin Change	112 (75.17)
Loss of appetite	111 (74.50)
Difficulty sleeping	109 (73.15)
Decreased interest in sexual activity	97 (65.10)
Depression	92 (61.74)
Nausea	91 (61.07)
Difficulty concentrating	90 (60.40)
Soreness in vein where chemotherapy was given	90 (60.40)
Feeling sluggish	89 (59.73)
Numbness in fingers and/or toes	84 (56.38)
Weight loss	83 (55.70)
Shortness of breath	78 (52.35)
Pain	76 (51.01)
Sore mouth	74 (49.66)
Cough	72 (48.32)
Sore throat	71 (47.65)
Difficulty swallowing	70 (46.98)
Vomiting	64 (42.95)
Bruising	62 (41.61)
Jaw pain	55 (36.91)
Constipation	55 (36.91)
Fever	54 (36.24)
Bleeding	47 (31.54)

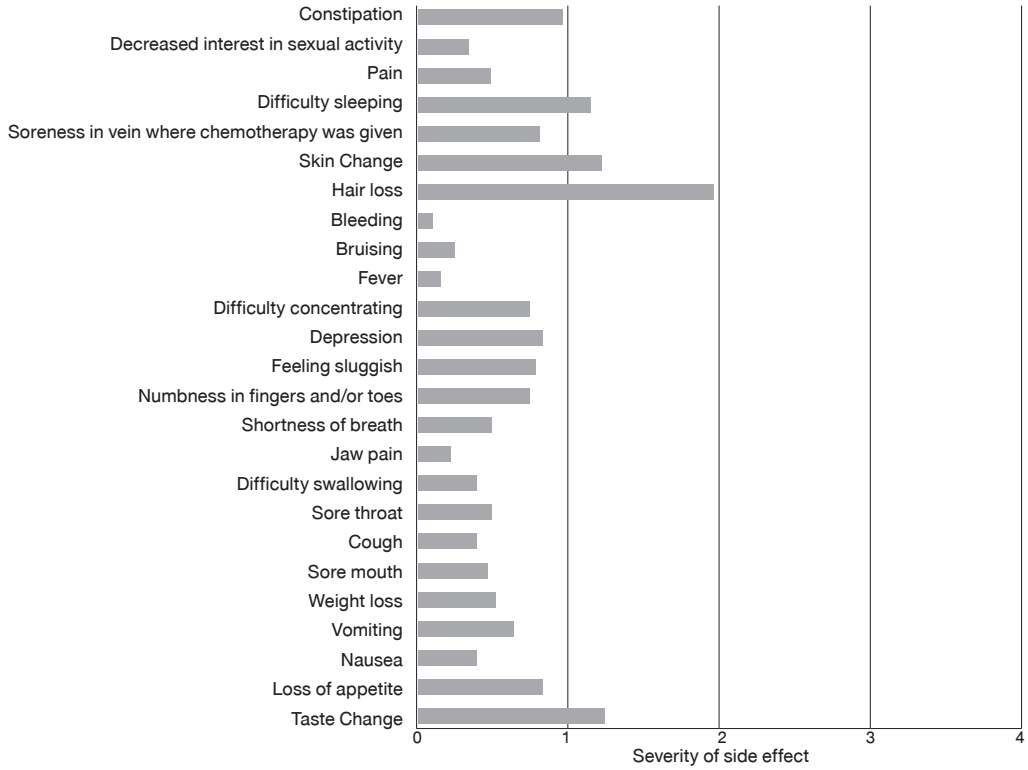


Figure 1: Average of level of severity of chemotherapy's side effects, measured on day 1, day 3 after receiving chemotherapy and on the last day of receiving chemotherapy in each cycle until the first three cycles of treatment was completed.
Level: 0 = no symptoms, 1 = mild, 2 = moderate, 3 = severe, 4 = very severe

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Table 3: The percentage of patients using symptom management strategies during chemotherapy treatment.

Symptoms	Percentage of Symptom management strategies						
	A	B	C	D	E	F	G
Taste Change	72.82	13.88	1.38	1.38	1.36	6.25	2.92
Loss of appetite	75.49	16.21	1.13	0.00	5.39	0.67	1.11
Nausea	29.62	4.64	37.56	0.88	21.68	4.01	1.63
Vomiting	25.01	3.72	0.00	0.00	69.52	0.00	1.75
Weight loss	81.81	13.35	0.00	0.00	3.25	1.59	0.00
Sore mouth	36.96	15.65	16.32	1.85	18.68	5.66	4.88
Cough	28.43	7.25	10.59	0.00	37.84	3.33	12.55
Sore throat	46.13	2.56	15.50	0.00	22.14	5.56	8.12
Difficulty swallowing	49.83	9.60	13.68	0.00	9.60	8.46	8.83
Jaw pain	27.78	11.11	0.00	0.00	0.00	61.11	0.00
Shortness of breath	16.67	44.44	5.56	0.00	13.89	5.56	13.89
Numbness in fingers and/or toes	15.82	9.76	6.73	0.00	16.50	35.35	15.82
Feeling sluggish	19.81	51.33	6.78	0.00	2.08	14.17	5.83
Depression	16.14	49.02	3.70	0.00	20.92	4.44	5.77
Difficulty concentrating	17.54	66.03	2.78	0.00	2.78	8.10	2.78
Fever	24.44	0.00	0.00	0.00	75.56	0.00	0.00
Bruising	11.11	0.00	0.00	0.00	16.67	42.22	30.00
Bleeding	18.10	6.67	0.00	6.67	33.33	35.24	0.00
Hair loss	35.75	12.74	4.09	1.19	3.31	14.26	28.66
Skin Change	8.76	3.74	15.87	5.02	21.70	21.70	23.22
Soreness in vein where chemotherapy was given	0	1.67	8.1	1.7	53.8	19.8	15.0
Difficulty sleeping	5.15	13.36	2.17	0.00	77.28	2.05	0.00
Pain	8.10	3.70	0.00	0.00	69.74	15.13	3.33
Decreased interest in sexual activity	0	11.11	0	0	0	77.78	11.11
Constipation	28.83	3.83	2.84	0.81	62.30	0.58	0.81
Percentage average	**26.62**	15.05	6.34	0.76	**27.15**	16.01	8.08

A = Diet / Nutrition / Life style, B = Mind / Body control, C = Biological treatment,
D = Herbs, E = Prescribed medicine, F = Do nothing, G = Others

Table 4: General individual factors that impacted on patients who applied symptom management strategies during chemotherapy treatment.

Factors	b	SEb	β	t	*p*
Gender	-1.960	3.399	-0.026	-0.577	0.564
Age	-0.072	0.116	-0.030	-0.624	0.533
Level of education	-5.249	1.269	-0.232*	-0.233	0.000
Stage of cancer	0.799	1.596	0.023	0.500	0.617
Caregiver	2.855	5.631	0.024	0.507	0.612
Channel of knowledge added	-13.904	2.479	-0.225*	-4.076	0.000

a (R = 0.420, R2 = 0.176; SEE = 25.25, F = 10.10)
*$p < 0.05$

Table 3 shows the symptom management strategy applied by 149 enrolled patients during the first three cycles of treatment: using suggested medication (27.15%), changing nutrition and lifestyle choices (26.62%) (e.g. refraining from eating meat), doing nothing and hoping circumstances will get better (16.01%), adapting mental and physical behavior such as practicing meditation and praying at temple (15.05%), engaging in general activities such as craftsmanship and reading books (8.08%), using biological therapy such as massage with or without hot press, sipping water, and exercise (6.34%), using herb therapy (0.76%). General individual factors that influenced patient in applying symptom management strategies during chemotherapy treatment included: level of education and having access to data resources about side effect management (Table 4).

Discussion

According to the theory of Dodd M, et al[6] on the apparent advantages of symptom management strategy during chemotherapy treatment in patients with solid cancer, we provided this knowledge and evaluated how our patients have handled symptoms caused by chemotherapy's side effects. Results demonstrated significantly low level symptom severity after patients used self-symptom management strategies particularly in using suggested medication. This finding was comparable to the study of Piumjariyakul U.[8] Our study populations have various ways to take care of themselves. Nurses are encouraged to provide information regarding possible side effects that might occur during treatment with chemotherapy, and are encouraged to advise patients regarding symptom management strategies in order to support their self-care when experiencing unfavorable symptoms caused by chemotherapy. We highlight that patients with solid cancer can benefit from multiple advantages after using symptom management strategies as this can result in optimizing their quality of life by being able to take care of themselves and to better manage the side effects of treatment.

Conclusion

Side effects of chemotherapy commonly develop during treatment of solid cancer. Educating and providing patients the information regarding symptoms linked to chemotherapy as well as self-care management when experiencing these symptoms is crucial. A symptom management strategy is not only there to ameliorate a patient's affliction but also to optimize their quality of life during the period of chemotherapy course.

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