STABILITY OF SYMPTOM CLUSTERS AND SENTINEL SYMPTOMS DURING THE INITIAL PHASE OF ADJUVANT CHEMOTHERAPY

Jiyeon Lee¹, Mira Park², Sun Young Rha³

¹ Chungnam National University, College of Nursing, Daejeon, Republic of Korea

² Eulji University, College of Medicine, Daejeon, Republic of Korea

³ Yonsei University, College of Medicine, Seoul, Republic of Korea

Introduction

Top priorities in symptom cluster studies include confirming stable groups of symptoms and identifying sentinel symptoms. Understanding the stability of symptom clusters and identifying sentinel symptoms would facilitate effective symptom management.

Objectives

This study aimed to evaluate the stability of symptom clusters and to identify sentinel symptoms during the initial phase of adjuvant chemotherapy (CTx).

Methods

Design: Secondary data analysis of the Paradigm Shift in Chemotherapy-Induced Nausea and Vomiting (PS-CINV) study.

Sample: A total of 209 cancer patients receiving adjuvant CTx who completed symptom evaluation for the 1st and 2nd cycles.

Measurement: The severity of 20 symptoms on a 0 to 10 numeric rating scale.

Analysis: Principal component analysis and hierarchical cluster analyses to identify symptom clusters using SPSS 24.0 and SAS 9.4. Principal variable analysis to identify sentinel symptoms using R program 3.4.1. Principal variable analysis considered minimum trace of partial variances of the unselected variables unexplained by the selected variables was utilized.

Results

Four symptom clusters were identified in the 1st cycle: a physical-psychological (pain, dyspnea, sleep disturbance, anxiety, depression), a gastrointestinal (nausea, loss of appetite, taste change), a fatigue-cognitive (fatigue, difficulty concentrating, drowsiness), and a urosexual (urinary problem, sexual problem) symptom cluster.

In the 2nd cycle, stable symptom clusters were identified, whereas the physical-psychological and fatigue-cognitive symptom cluster were merged together resulting in 3 clusters.

The identified sentinel symptoms were anxiety, loss of appetite and fatigue in the 1st cycle, and loss of appetite, depression, and fatigue in the 2nd cycle.

Conclusions

Stable symptom clusters were identified during the initial phase of adjuvant CTx. The identified sentinel symptoms will facilitate efficient symptom management. Symptom management needs to be focused on managing emotional symptoms, appetite and fatigue.

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	1st cycle			2nd cycle		
	Prevalence (%)	Mean	SD	Prevalence (%)	Mean	SD
difficulty concentrating	162 (77.5)	3.36	2.81	168 (80.4)	3.40	2.66
drowsiness	174 (83.3)	3.93	2.92	180 (86.1)	3.99	2.76
fatigue	190 (90.9)	4.87	2.87	199 (95.2)	4.97	2.74
sleep disturbance	153 (73.2)	3.76	3.35	165 (78.9)	3.67	2.9
anxiety	134 (64.1)	2.58	2.81	136 (65.1)	2.48	2.64
depression	126 (60.3)	2.33	2.66	134 (64.1)	2.46	2.58
pain	134 (64.1)	2.70	3.01	136 (65.1)	2.58	2.71
dyspnea	115 (55.0)	2.02	2.63	125 (59.8)	2.30	2.73
mucositis	78 (37.3)	1.22	2.26	106 (50.7)	1.84	2.53
taste change	166 (79.4)	4.31	3.48	180 (86.1)	4.53	3.33
loss of appetite	178 (85.2)	5.00	3.51	180 (86.1)	4.78	3.28
nausea	176 (84.2)	4.41	3.34	180 (86.1)	4.39	3.18
vomiting	78 (37.3)	1.39	2.51	83 (39.7)	1.46	2.46
constipation	125 (59.8)	3.33	3.60	134 (64.1)	2.66	2.94
diarrhea	67 (32.1)	1.37	2.58	82 (39.2)	1.37	2.38
urinary problem	66 (31.6)	1.30	2.54	74 (35.4)	1.24	2.29
sexual problem	50 (23.9)	1.07	2.49	70 (33.5)	1.51	2.75
skin and nail change	52 (24.9)	0.77	1.87	105 (50.2)	2.02	2.77
alopecia	66 (31.6)	0.91	2.08	161 (77.0)	4.87	4.03
neuropathy	111 (53.1)	2.13	2.77	148 (70.8)	3.14	3.03

Table 1. Symptom prevalence and severity in the 1st and 2nd CTx cycles

Figure 1. Symptom clusters in the 1st cycle

Figure 2. Symptom clusters in the 2nd cycle