Association among cachexia syndrome, symptom distress, and quality of life in pancreatic cancer patients

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Background

More than 80% of pancreatic patients with newly diagnosed experienced cachexia syndrome at diagnosis.[1] Previous studies revealed that pancreatic cancer patients with body weight loss before surgery had shorter survival to compare with without cachexia syndrome, and it will decrease quality of life (QoL).[2-3] However, there is no study with longitudinal design to explore the relationship among cachexia syndrome, symptom distress and QoL.

Aims

This study was to explore if the cachexia syndrome pre-operation was the significant factors to predict the longitudinal QoL after operation.

Method

1. A longitudinal design was used in this study, and the data collected at 1~2 weeks before operation (T0), 2 months (T1), 3 months (T2), and 6 months (T3) after operation.
2. Patients who scheduled to operate were recruited from surgery clinics at a medical center in Taipei, and cachexia syndrome was defined as patients' total body weight loss > 5% over the past 6 months in this study.
3. A structured questionnaire with Fatigue Symptom Inventory, Symptom Severity Scale, and Functional Assessment of Cancer Therapy-General Scale were used to collect patients' fatigue, symptom distress and QoL, respectively. In addition, the questionnaire included patients' demographic and clinical characteristic.
4. In this study, The generalized estimating equation (GEE) was used to examine the significant associated factors with QoL after operation .

Results

1. Totally, 45 pancreatic cancer patients participated in this study. Among patients, 64.6% (N = 29) was recognized as cachexia syndrome.
2. Patients with cachexia syndrome had more percentage to accept chemotherapy (χ^2 = 9.504; p = .002), and suffer from fistula after operation (χ^2 = 5.237; p = .022) **(table 1 and 2)**.
3. Cachexia group had higher level of fatigue intensity (t= -2.889; p=.06) and duration (t = -2.363; p = .023) before surgery, and fatigue duration (t = -3.898; p = .001), fatigue interference with daily living (t = -2.972; p = .007), and symptom distress (t = -2.964 ; p = .006) at 6 months after operation than non-cachexia syndrome group **(figure 1)**.
4. In the GEE analysis, the patients with higher level of symptom distress had lower level of QoL (β = -.323, p < .0001) after control the significant different factors at baseline between the two groups **(table 3)**.

Conclusion and Clinical Implication

1. This study found that cachexia syndrome wasn't a significant associated factor with QoL.
2. Symptom distress was the significant factor affecting longitudinal QoL in pancreatic cancer patients.
3. Healthcare providers should pay more attention and assist pancreatic cancer patients to manage symptom distress since they diagnosed to increase the level of QoL.

References

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Acknowledgement

Table 1 Demographic Characteristics in two groups (N=45)

Demographic Characteristics	Cachexia (n=29)		Non-Cachexia (N=16)		p[a]
	n	%	n	%	
Age (Mean/SD)	61.45	10.61	58.56	12.98	.391
Gender					.268
Male	15	51.7	11	68.8	
Female	14	48.3	5	31.2	
Occupational Status					.360
Unemployed	15	51.7	6	37.5	
Part-time/ Full-time work	14	48.3	10	62.5	
Marital status					.606
Single/ Divorce/ Widower	7	24.1	11	68.8	
Married	22	75.9	5	31.2	
Years of education (Mean/SD)	12.14	3.95	12.19	4.82	.856
Family status					.051
Live with family	29	100.0	14	87.5	
Live alone	0	0.0	2	12.5	
Religion affiliation					.430
No	6	20.7	5	31.3	
Yes	23	79.3	11	68.7	

Note: [a] Examined by the t-test or chi-square test.

Table 2 Clinical Disease Characteristics in two groups (N=45)

Clinical Disease Characteristics	Cachexia (n=29)		Non-Cachexia (N=16)		p[a]
	n	%	n	%	
Functional status [a]					.350
50-70	7	24.1	2	12.5	
80-100	22	75.9	14	87.5	
Cancer Diagnose					.367
Pancreatic Ductal Adenocarcinoma/ Ampullary Cancer	19	65.5	8	50.0	
Pancreas Neuroendocrine Neoplasm	4	13.8	5	31.3	
Others	6	20.7	3	18.8	
Stage					.459
I	7	24.1	2	12.5	
II	13	44.8	7	43.8	
III	3	10.3	1	6.3	
IV	3	10.3	1	6.3	
Pancreas Neuroendocrine Neoplasm	3	10.3	5	31.3	
Resectable					.441
No	4	13.8	1	6.3	
Yes	25	86.2	15	93.7	
Tumor site					
Head	19	65.5	10	62.4	
Body	3	10.3	3	18.8	
Tail	6	20.7	3	18.8	
Head + Body + Tail	1	3.4	0	0.0	
Accepting chemotherapy after operation					**.022**
No	8	27.6	10	62.5	
Yes	21	72.4	6	37.5	
PTCD before operation					.201
No	23	79.3	15	93.8	
Yes	6	20.7	1	6.3	
Fistula after operation					**.002**
No	24	82.8	6	37.5	
Yes	5	17.2	10	62.5	
Smoking					.286
No	19	65.5	7	43.8	
Yes	4	13.8	5	31.3	
Quit	6	20.7	4	24.9	
Chronic disease					.876
No	6	20.7	3	18.8	
Yes	23	79.3	13	81.3	
Body mass index (Mean/SD)	22.50	3.10	24.07	3.82	.071

Note: [a] Examined by the t-test or chi-square test.

Table 3 Examining the significant factors of the Quality of Life in the Generalized Estimating Equations Analysis a (N=45)

Variable	Coefficient	Std. Err.	Wald chi-square	p-value
Fistula after operation (0=No; 1=Yes)	-.430	3.9197	.012	.913
Chemotherapy after operation (0=No; 1=Yes)	4.369	3.2732	1.781	.182
Cachexia (0=No; 1=Yes)	-3.071	3.4405	.797	.372
Symptom distress	-.334	.0845	15.613	**.000**
Fatigue	-.139	.0978	2.035	.154
Time	.829	1.2226	.460	.498
Intercept	88.458	3.8315	533.014	**.000**

Note: [a] generalized estimating equation was based on unstructured working correlation matrix.
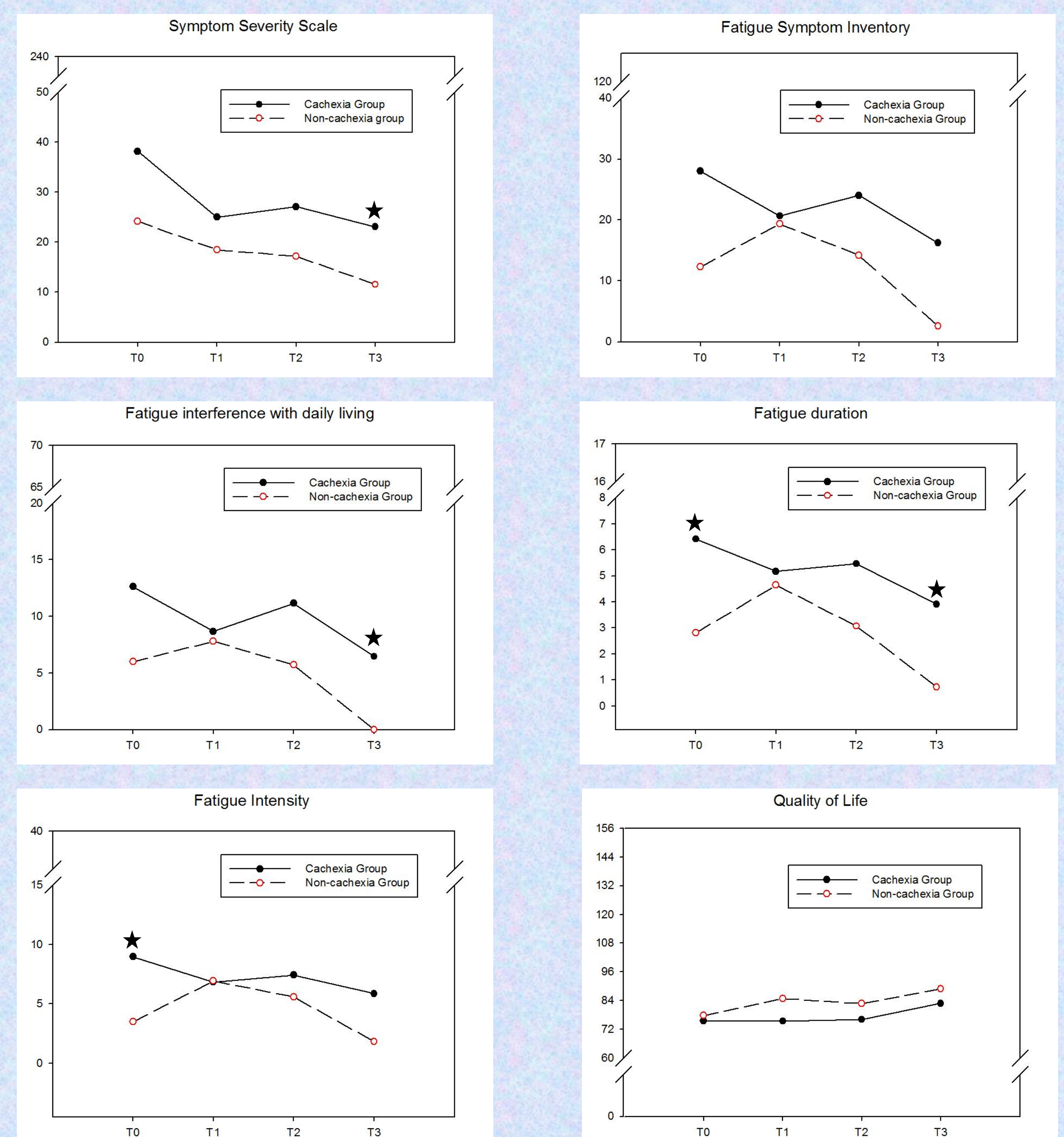

Figure 1 Change in Mean Scores of Symptom Distress, Fatigue Characteristics, and Quality of Life across 4 time points for the 2 groups (Cachexia Group=29; Non-cachexia Group=16)

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