Quality of Life in Advanced Lung Cancer Patients Receiving Immunotherapy

Chih-Chien Hsu[1,2], RN, MSN., Min-Ru Chen[1], RN, MSN., Yun-Hsiang Lee[1], RN, PHD.,Yaun-Ju Lin[1], RN, MSN.,
Yeur-Hur Lai[1,2], RN, PhD, FAAN

[1] School of Nursing, College of Medicine, National Taiwan University, Taipei, Taiwan.
[2] National Taiwan University Cancer Center, Taipei, Taiwan.

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Introduction

Immune checkpoint inhibitors have played an important role in cancer treatments. It provides lung cancer patients another treatment option and better outcomes. However, it might also bring some distress. Thus, this study aims to examine the overall quality of life (QoL) in advanced stage lung cancer patients undergoing immunotherapy.

Methods

A cross-sectional study with consecutive sampling was conducted in a medical center in Taiwan. Eligible subjects were lung cancer patients receiving immunotherapy. Patients were assessed with Background Information Form (BIF) and the EORTC Core Quality of Life questionnaire (EORTC QLQ-C30). Descriptive statistics, Pearson's correlation, t test, and ANOVA were applied to analyze the data. All the patients were interviewed by a trained research nurse after receiving IRB approval and patients' consents.

Results

- 120 patients in total were recruited. (Table 1)
- QoL score in patients receiving immunotherapy. (Table 2)
  - The patients had an impaired QoL with the global QoL scoring as 66.6. (±26.7)
  - The three worst functional domains of QoL were: role, social and physical functions, with mean score as 70.9 (±30.4),71.3 (±30.3) and 75.4 (±25.1), respectively.
  - The most distressful symptom was fatigue (30.1±29.1).
  - Patients also suffered from financial difficulties (27.8±34.9).
- Correlations among QoL and clinical characteristics (Table 3)
  - Global health status correlated better role function and physical function, and less fatigue and appetite loss.
  - QoL was positively correlated to the times of immunotherapy.

Conclusion

Advanced lung cancer patients suffered from impaired QoL, especially in role, social and physical functions and fatigue symptoms. Future study to develop and test the related intervention based on the results of current study are strong suggested to enhance their quality of life.

Table 1. Background Information (N=120)

Variable	N (%)	Mean (SD)
Gender		
Male	60 (50.0)	
Female	60 (50.0)	
Age		61.6 (11.4)
Economic status		
Income more than expenses	51 (42.5)	
Income expenses balance	40 (33.3)	
Expenses more than income	29 (24.2)	
Time since diagnosis (year)		1.8 (1.7)
Number of immunotherapy cycles		11.4 (16.3)
Treatment modality		
Immunotherapy	50 (36.5)	
Immunotherapy + chemotherapy	87 (63.5)	

Author Email: he0915687009@gmail.com

Table 2. The Sore of EORTC QLQ-C30

Variable	Mean(SD)
Global health status/QoL	66.6(26.7)
Functional scales	
- Cognitive functioning	90.1(15.4)
- Emotional functioning	82.8(18.7)
- Physical functioning	75.4(25.1)
- Social functioning	71.3(30.3)
- Role functioning	70.9(30.4)
Symptom scales	
- Fatigue	30.1(29.4)
- Financial difficulties	27.8(34.9)
- Dyspnea	24.2(27.0)
- Appetite loss	20.8(32.1)
- Insomnia	19.2(27.9)
- Pain	15.3(25.4)
- Constipation	11.1(20.9)
- Nausea/vomiting	8.6(21.6)
- Diarrhea	3.8(11.6)

Table 3.Pearson Correlations Among Subscales Score of EORTC QLQ-C30 and Clinical Characteristics

	1	2	3	4	5	6	7	8	9	10	11	12
1.Global health status/QoL	1.00											
2.Times of immunotherapy	0.36[b]	1.00										
3.Physical functioning	0.62[b]	0.34[b]	1.00									
4 Role functioning	0.66[b]	0.34[b]	0.81[b]	1.00								
5.Emotional functioning	0.54[b]	0.29[b]	0.43[b]	0.42[b]	1.00							
6.Cognitive functioning	0.39[b]	0.25[b]	0.51[b]	0.40[b]	0.54[b]	1.00						
7.Social functioning	0.59[b]	0.32[b]	0.47[b]	0.55[b]	0.67[b]	0.46[b]	1.00					
8.Fatigue	-.64[b]	-.52[b]	-.72[b]	-.67[b]	-.51[b]	-.47[b]	-.56[b]	1.00				
9.Dyspnea	-.36[b]	-.05	-.37[b]	-.36[b]	-.19[a]	-.11	-.23[a]	0.32[b]	1.00			
10.Insomnia	-.38[b]	-.26[b]	-.35[b]	-.32[b]	-.31[b]	-.26[b]	-.33[b]	0.50[b]	0.28[b]	1.00		
11.Appetite loss	-.60[b]	-.23[a]	-.58[b]	-.57[b]	-.43[b]	-.44[b]	-.42[b]	0.64[b]	0.40[b]	0.37[b]	1.00	
12.Financial difficulties	-.37[b]	-.24[b]	-.33[b]	-.42[b]	-.33[b]	-.34[b]	-.59[b]	0.25[b]	0.12	0.11	0.32[b]	1.00

Note: Subscale of symptom in EORTC QLQ-C30 includes top 5 item. [a] $p < 0.05$, [b] $p < 0.01$.