

LUNG CANCER IN PATIENTS UNDER 40 YEARS
A PROSPECTIVE OBSERVATIONAL MULTICENTER STUDY: GFPC 1001 STUDY

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Introduction

Lung cancer is the leading cause of cancer death in France and worldwide. Lung cancer in patients under 40 years is infrequent and few data are available about the presentation and outcomes of lung cancer in this population. This study aimed to further describe the clinical characteristics, the treatments and the outcome of lung cancer occurring in the population of young adults in France.

Results :

Patients characteristics

One hundred and forty-six patients with lung cancer were included. Median age at diagnosis was 38 (20-40). The proportion of men was 58%. Socioeconomic status was lower comparing to general population, 25% of the patients had no diploma.

Variable	N	med	quart	min	max
Age at diagnosis (years)	138	38,1	35-40	20,4	40,9
		N	n	%	
Gender		144			
	Male		84	58%	
	Female		60	42%	
Familial status		140			
	Married		102	73%	
	Separated		12	9%	
	Widowed		0	0%	
	Single		26	19%	
Ethnic group		134			
	Caucasian		121	90%	
	African		2	1,5%	
	Asian		6	4,5%	
	North African		5	4%	
Environment		139			
	Rural		40	29%	
	City <20 000		32	23%	
	City 20 000-100 000		28	20%	
	City > 100 000		39	28%	

Patients characteristics

Cancer characteristics

Median time between symptoms and diagnosis was 2 months. The distribution of stages I-II, IIIA and IIIB-IV was 8%, 10% and 82%; 97 patients (66%) were diagnosed with metastasis at presentation and the first metastatic site was brain in 46% of patients. Adenocarcinoma was the most common histologic subtype (77%). EGFR screening was performed for 107 patients and 12 of the patients (11%) had an activating mutation.

Variable	N	Med	Min	Max
Time between symptoms and diagnosis (months)	131	2	0	14
		N	n	%
Diagnosis stage		140		
	IA		6	4%
	IB-IIA-IIIB		5	4%
	IIIA		14	10%
	IIIB		18	13%
	IV		97	69%
Histology		114		
	Squamous cell carcinoma		5	4%
	Small cell carcinoma		5	4%
	Adenocarcinoma		107	77%
	Large cell carcinoma		8	6%
	Undifferentiated carcinoma		14	10%
EGFR mutations		145		
	No available		35	24%
	Available		110	76%
		107		
	Positive		12	11%
	Negative		95	89%
Metastatic sites		97		
	Brain		43	44%
	Bone		33	32%
	Node		26	26%
	Lung		25	26%
	Liver		14	14%
	Adrenal gland		14	14%
	Pleural		11	11%
	Skin		5	5%
	Peritoneal		2	2%
	Others		8	8%

Cancer characteristics

Patients and Methods

Study design

A prospective observational clinical study was conducted in 37 centers in France. All patients 18-40 years of age, diagnosed with lung cancer between November 2010 and December 2013 were enrolled. Patients with carcinoid tumor were not included in this analysis.

Objectives

- The primary endpoint was the anatomo-clinical description of lung cancer in patients under 40 years.
- Secondary endpoint was overall survival

Tobacco and drug use

One hundred and twenty-four patients (86%) were current or former tobacco smokers with a median of 20 packs-year. Eighty-six patients (59%) have been exposed to passive smoking essentially in childhood (51%). Sixty-nine patients (50%) were current or former cannabis smokers (among which 50% regularly).

Treatments

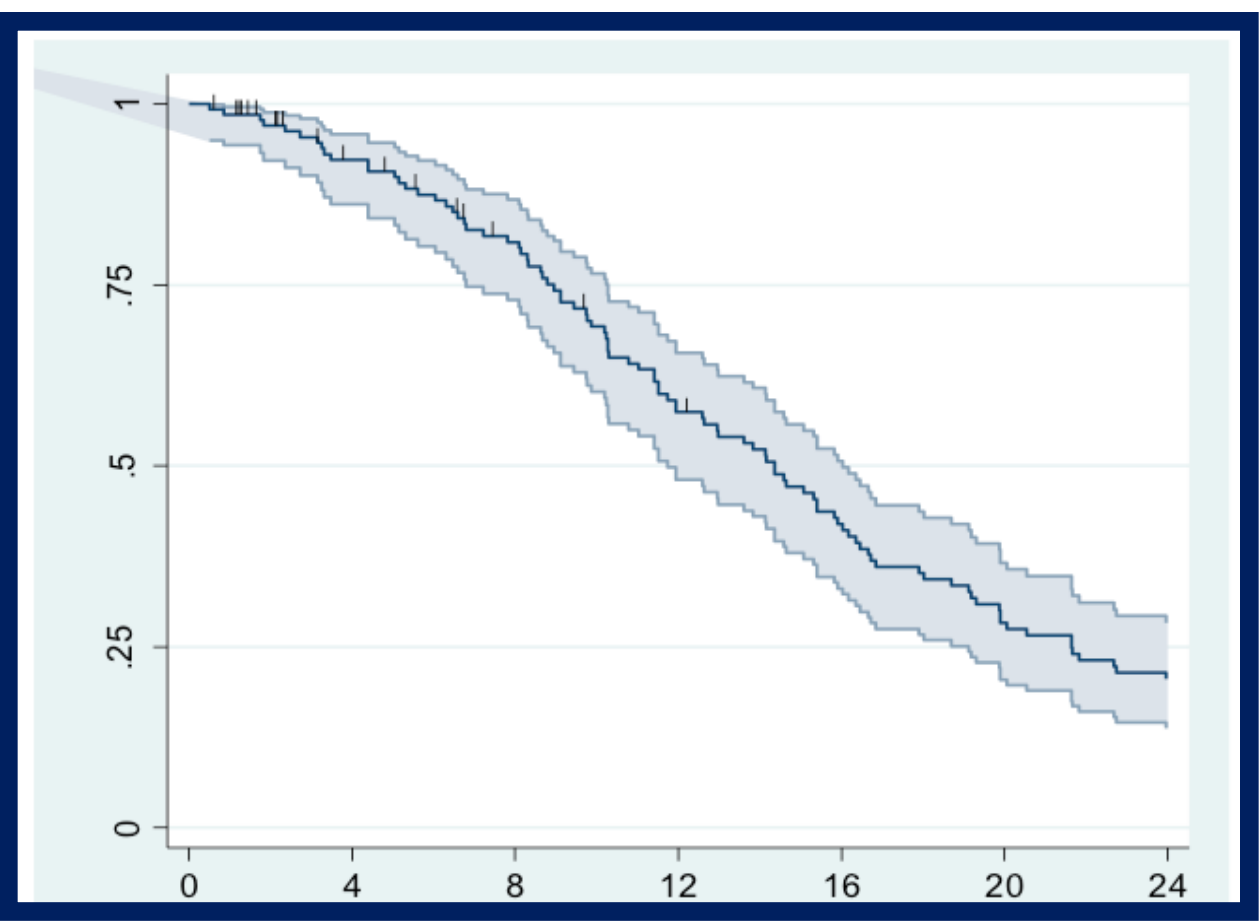
The first line treatments were 91% chemotherapy, 40% radiotherapy, 19% surgery and 6% best supportive care. Median overall survival was 14.4 months.

Variable	N	n	%		
Active smokers	144				
No		20	14%		
Yes, stopped		48	33%		
Yes		76	53%		
Number of Pack-Years	N	Med	Quart	Min	Max
	110	20	12-23	0	96
Passive smokers	145				
No		59			41%
Yes		86			59%
Yes, in childhood		74			51%
Yes, in adulthood		66			46%
Cannabis	137				
No		68			50%
Yes, stopped		48			35%
Yes		21			15%
: Regular	67	40			60%
Occasional		27			40%
Other drugs	118				
No		101			86%
Yes		17			14%
Including:					
Hallucinogen		9			
Cocaine		10			
Amphetamine		12			
Heroin		5			

Tobacco and drug use

Variable	N	n	%		
Treatment	145				
Best supportive care		8			6%
Chemotherapy		132			91%
Radiotherapy		58			40%
Surgery		27			19%
Results	N	Med	Quart	Min	Max
Chemotherapy time (months)	119	0,7	0,4-1,1	0	13
Evolution	104				
Complete response		7			7%
Partial response		40			38%
Stable disease		25			24%
Local progression		21			20%
Distant progression		11			11%

Treatments



Overall survival

Conclusion

This study is the first national prospective study dedicated to patients under 40 years diagnosed with lung cancer. Compared to the general population of lung cancer, we observed a high proportion of women, adenocarcinoma histology, advanced disease at diagnosis, tobacco and cannabis use.