

# LUNG CANCER EPIDEMIOLOGY AND SURVIVAL OUTCOMES IN VOJVODINA, SERBIA



Darijo Bokan<sup>1</sup>, Bojan Zaric<sup>1</sup>, Tomi Kovacevic<sup>1</sup>, Jelena Djekic Malbasa<sup>1</sup>, Ilija Andrijevic<sup>1</sup>

<sup>1</sup>Institute for Pulmonary Diseases of Vojvodina, Faculty of Medicine, University of Novi Sad, Serbia

## Introduction

Even though Serbia is one of the countries with the highest incidence of lung cancer in the world, there is no recent data published on the incidence, mortality survival time or the most significant patients characteristicsfor the Northern Serbian Province of Vojvodina

## Patients and methods

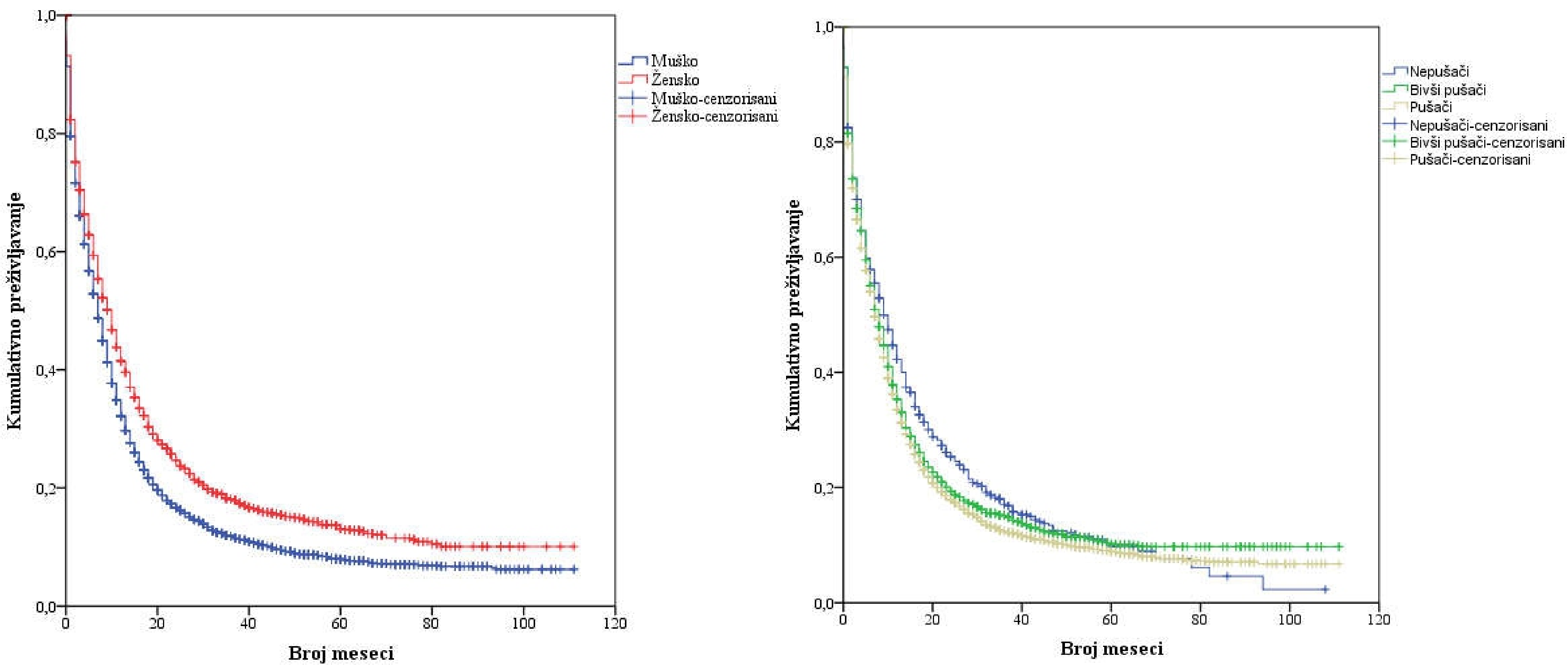
For the purpose of this retrospective study we collected data of 21915 patients from seven Public Health Institutes, one for each district. Data of 8142 patients for survival analysis were collected from the Institute for Pulmonary Diseases of Vojvodina Hospital Information System and the Lung Cancer Registry. The primary objective of the study was to determine the impact of demographic and clinical pathological characteristics of patients on overall survival. The secondary objective was to analyze the incidence and mortality of lung cancer in the region of Vojvodina.

Table 1. Patients characteristics

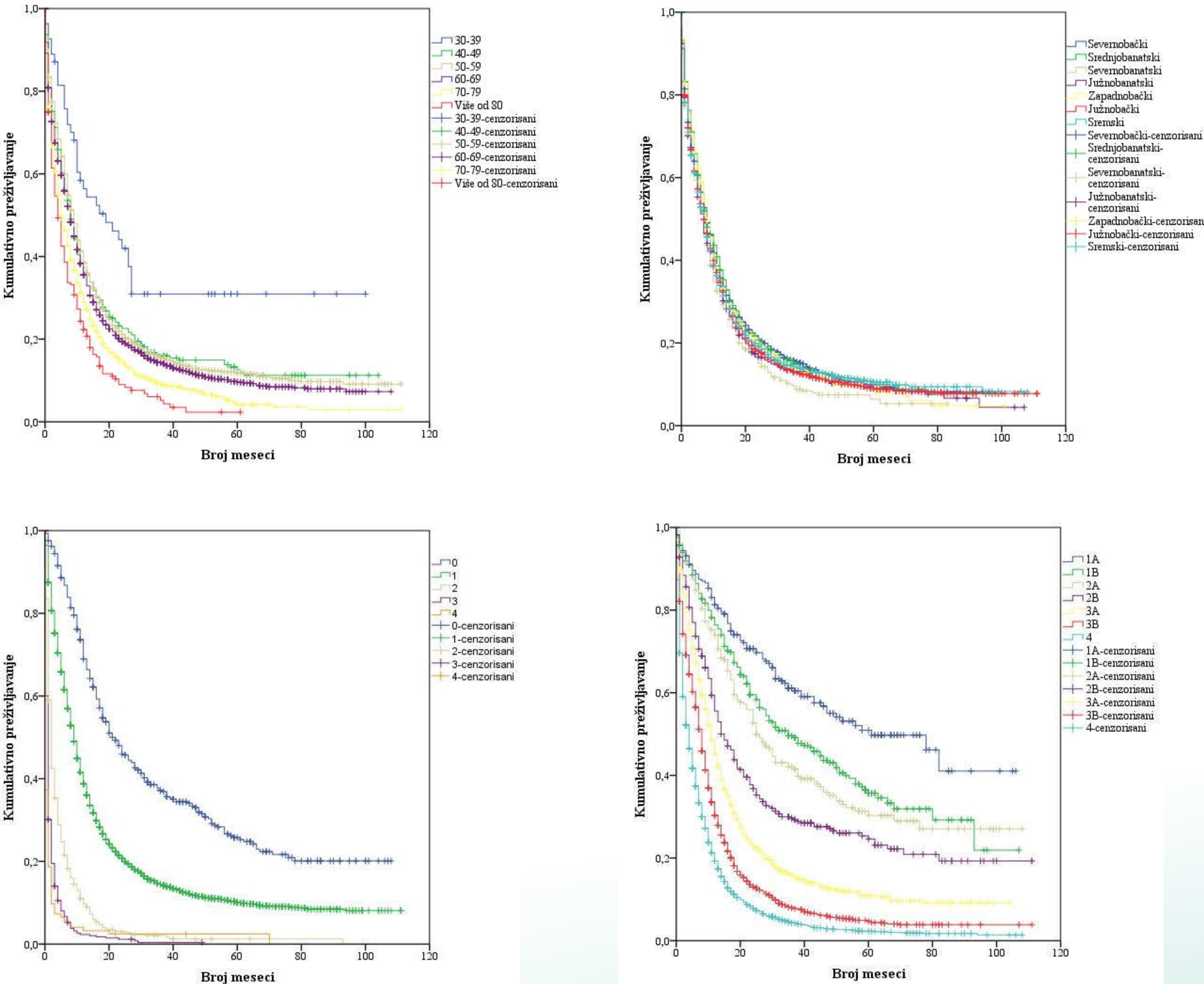
	Male (n=5456)	Female (n=2084)	Significance
<b>Age (years)</b>	63.8 (±8.59)	62.5 (±9.30)	p=0.000
<b>Smoking status</b>			
Never-smoker	234 (4.3%)	400 (19.2%)	p=0.000
Former smoker	1567 (30.4%)	338 (16.2%)	
Current-smoker	3565 (65.3%)	1346 (64.6%)	
<b>PCKY Index</b>	54.8 (29.5)	37.5 (21.9)	p=0.000
<b>Socioeconomic status</b>			
Very low	174 (3.3%)	78 (3.7%)	p=0.002
Low	553 (10.1%)	220 (10.6%)	
Middle	3623 (66.4%)	1289 (61.9%)	
Good	1982 (18.0%)	432 (20.7%)	
Great	124 (2.3%)	65 (3.1%)	
<b>ECOG performance status</b>			
0	307 (5.6%)	144 (6.9%)	p=0.210
1	4111 (75.3%)	1568 (75.2%)	
2	620 (11.4%)	220 (10.6%)	
3	308 (5.6%)	107 (5.1%)	
4	87 (1.6%)	39 (1.9%)	
5	23 (0.4%)	6 (0.3%)	
<b>Stage</b>			
IA	134 (2.5%)	100 (4.8%)	p=0.000
IB	205 (3.8%)	94 (4.5%)	
IIA	177 (3.2%)	70 (3.4%)	
IIB	263 (4.8%)	102 (4.9%)	
IIIA	1049 (19.2%)	352 (16.9%)	
IIIB	1355 (24.8%)	531 (25.5%)	
IV	2273 (41.7%)	835 (40.1%)	
<b>Cancer type</b>			
Adenocarcinoma	2223 (40.7%)	1119 (53.7%)	p=0.000
Squamous	2064(37.8%)	408(19.6%)	
Microcellular	931 (17.1%)	455 (21.8%)	
Adenosquamous	53 (1.0%)	23 (1.1%)	
Neuroendocrine	120 (2.2%)	48 (2.3%)	
Carcinoid	25 (0.5%)	26 (1.2%)	
<b>Survival</b>			
<b>1- year</b>	30.1%	38.7%	p=0.000
<b>3- years</b>	8.1%	12.1%	p=0.000
<b>5-years</b>	4.3%	6.9%	p=0.000

## Results

A total of 7540 patients were eligible for the survival analysis, 5456 (72.4%) males and 2084 (27.6%) females. The average survival time, including all stages and cancer types was 17.1 months for men and 23.2 months for women (p= 0.000). There was statistically significant difference in survival time by gender in subtypes of adenocarcinoma (p= 0.000), squamous cell carcinoma (p= 0.000) and microcellular carcinoma (p= 0.001). Analysis showed significant difference in survival by age (p= 0.000), cancer type (p= 0.000), stage of the disease (p= 0.000), ECOG performance status (p= 0.000),smoking status (p= 0.001), TNM stage of disease (p= 0.000) and among districts (p= 0.014).



Graphs 5 and 6. Survival analysis (gender and smoking status)



Graphs 1-4. Survival analysis (Age, Districts, ECOG, Stage)

## Conclusion

Northern Serbian Province of Vojvodina is one of the regions with the highest incidence and mortality of lung cancer and overall survival is low. Determining the impact of the most important demographic and tumor characteristics on lung cancer patients' survival, as well as incidence and mortality rates define the parameters necessary for adequate planning of activities and strategies for improving the prevention, diagnosis and treatment of patients in Vojvodina.

## Disclosure

The autors declare that they do not have conflict of interest