EPIDEMIOLOGY, PATIENTS' CHARACTERISTICS AND HEALTHCARE COSTS IN EARLY-STAGE NON-SMALL-CELL LUNG CARCINOMA: A REAL-WORLD ANALYSIS IN ITALY

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BACKGROUND AND OBJECTIVES

Lung cancer represents the most frequent and lethal cancer worldwide [1]. Non-small cell lung cancer (NSCLC) is the predominant form of lung cancer [2], with about half of the cases diagnosed with Stage I-III disease. In spite of the advances in diagnostic procedures and the current therapeutic options, the management of NSCLC represents an open challenge for researchers and clinicians, above all for the high frequency of relapse which involve up to 60% of patients [3].

This real-world analysis aims to estimate the epidemiology of early-stage NSCLC (eNSCLC), patients' characteristics, and economic burden in a clinical practice setting in Italy.

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METHODOLOGY

An observational analysis was performed using administrative databases (ADB) linked to pathological anatomy-data (APD), covering around **2.5 mln health-assisted individuals**.
From **2015-mid 2021** (study-period) eNSCLC patients (stage II-IIIA) were identified by the algorithm shown in **Figure 1.**

Figure 1. Algorithm for the identification of patients
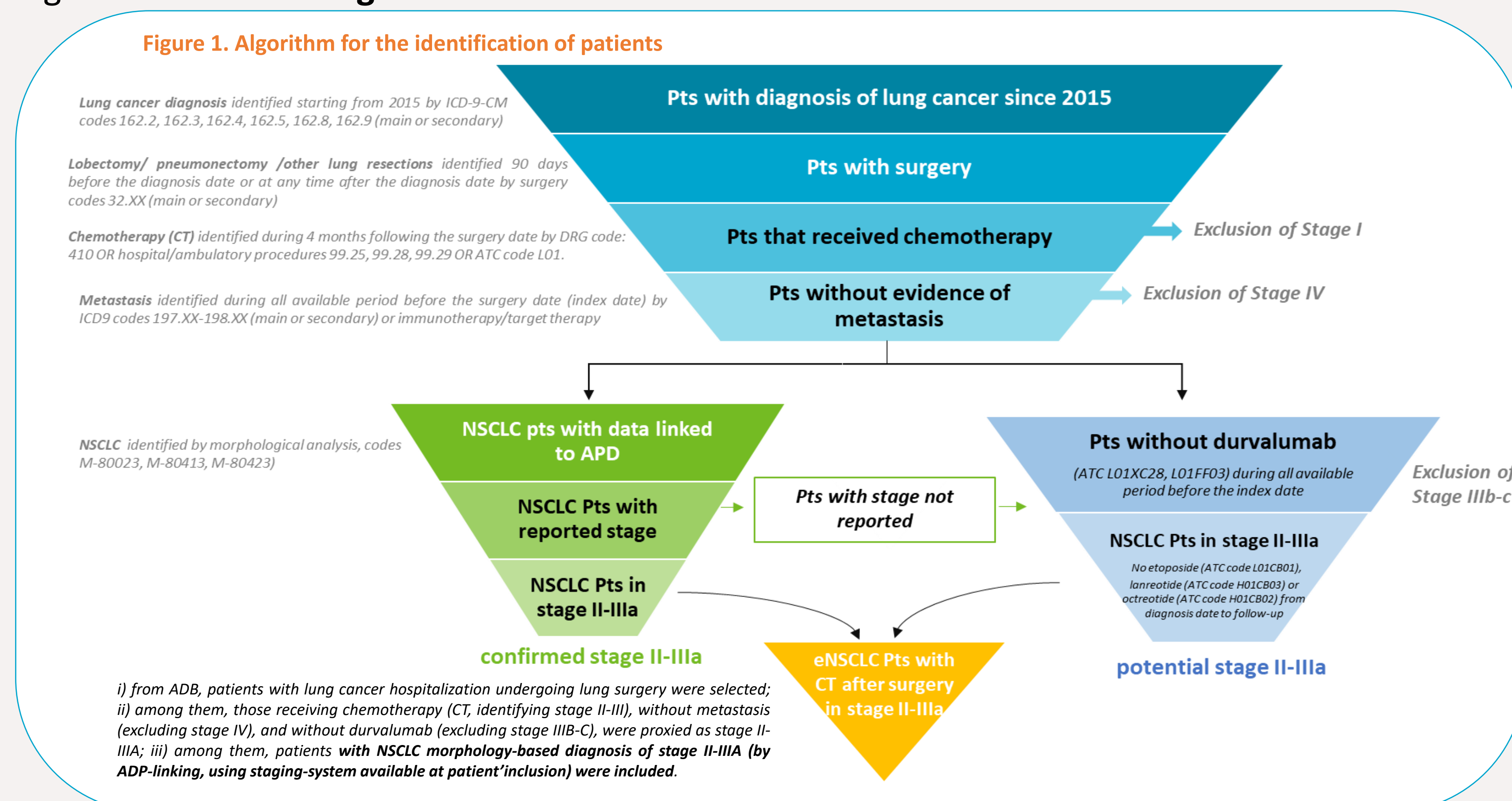
INDEX-DATE: lung surgery-date (patients were characterized during 12-months before index-date and followed-up from index-date until study-period ending). Patients were stratified into those presenting **loco-regional or metastatic recurrence** during follow-up, and **annualized healthcare direct-costs** covered by the Italian National Health System (INHS) were estimated.
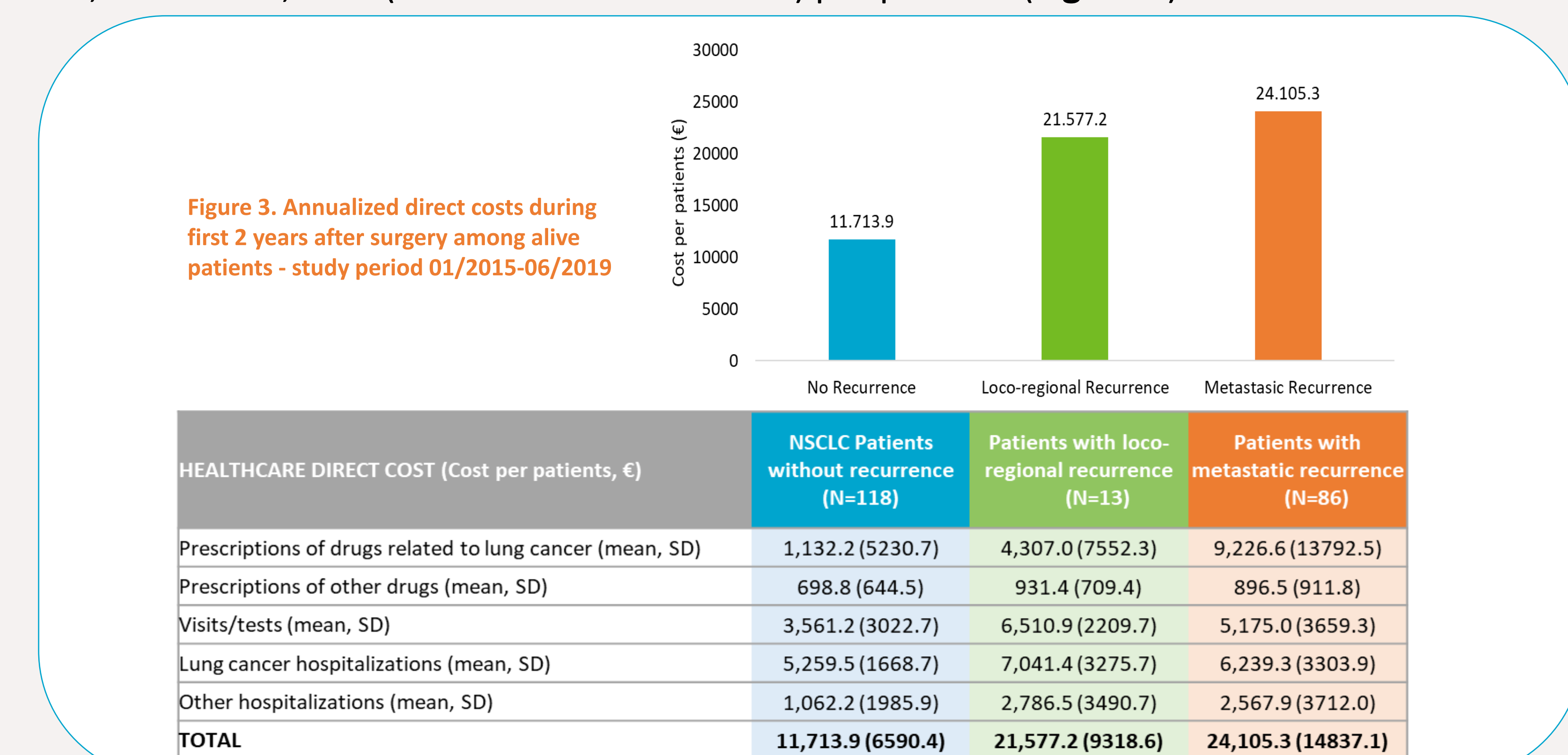
RESULTS

PREVALENCE AND INCIDENCE OF eNSCLC PATIENTS DURING 2019-2020 AND PROJECTION ON ITALIAN POPULATION

➤ On 2019-2020, the prevalence of eNSCLC was 104.3-117.1/million health-assisted subjects, and the annual incidence was 38.6-30.3/million (**Figure 2A**).
➤ Data projected to **Italian population** estimated 6,206 (2019) and 6,967(2020) prevalent and 2,297 (2019) and 1,803 (2020) incident cases (**Figure 2B**).

Figure 2. Prevalence and incidence of eNSCLC in the sample population (A) and Italian population (B)
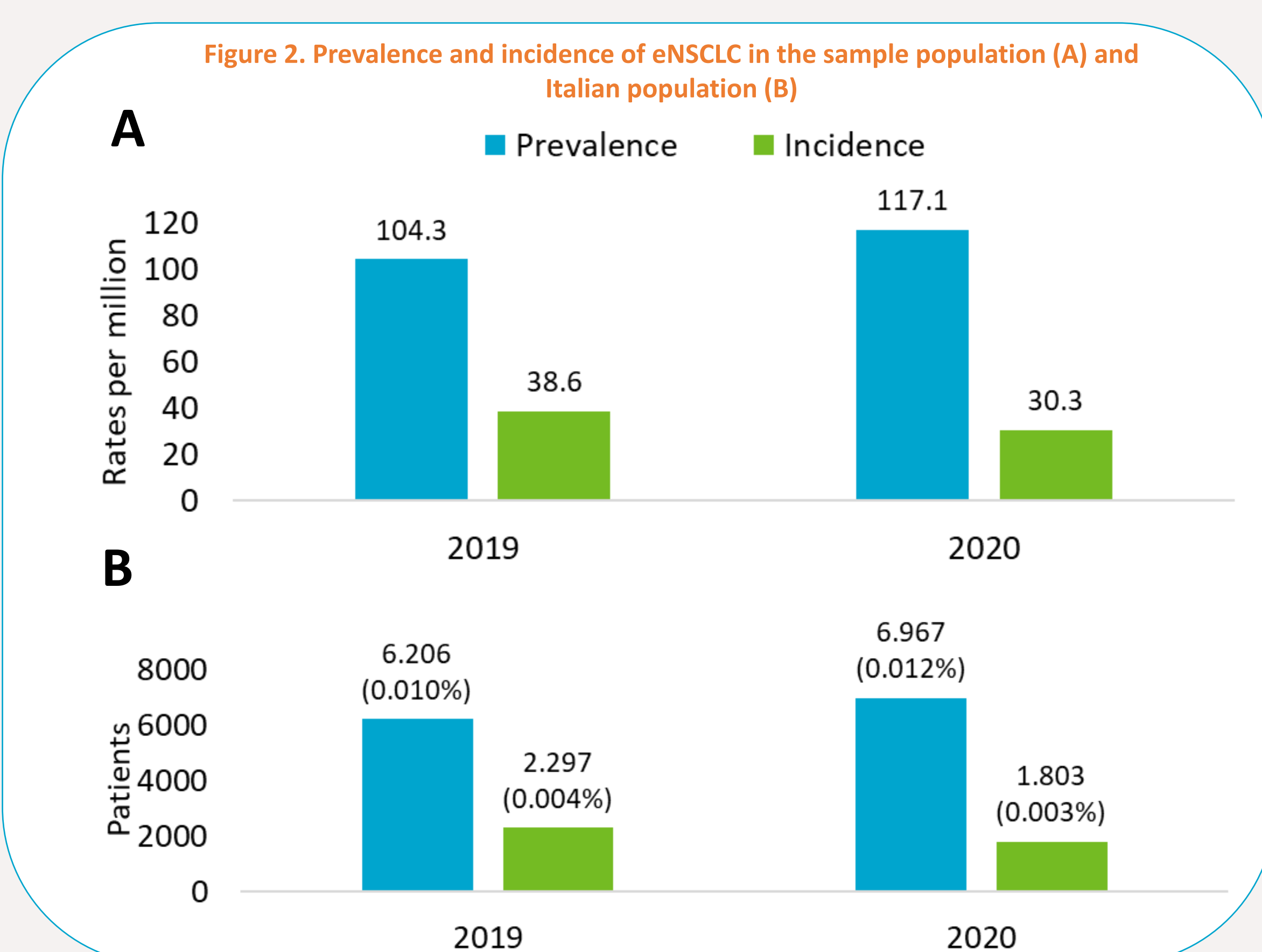
RECURRENCE AND ANNUALIZED HEALTHCARE DIRECT COSTS DURING FIRST 2 YEARS AFTER SURGERY AMONG ALIVE PATIENTS

➤ Overall, **458 eNSCLC patients were included**, aged 67.4±8.4 years (60.5% males).
➤ During 5-year follow-up period after surgery, **52.4%** of patients had a recurrence after a **median period of 20.5** (95%CI: 14.6-29.5) months (**not-shown**). At **24-months after surgery**, **45.6%** (N=99/217) **patients had recurrence** [6% (N=13/217) loco-regional and 39.6% (N=86/217) metastatic-recurrence) (**Figure 3**).
➤ Healthcare total direct-costs/patients averaged 11,714€ in no-recurrence and 21,577€ and 24,105€ in loco-regional and metastatic-recurrence patients, respectively (**Figure 3**).
➤ The cost related to drugs for lung cancer averaged **1,132€ in no-recurrence and 4,307€ and 9,227€ in loco-regional and metastatic-recurrence patients**, respectively (**Figure 3**). Moreover, those for **visits/tests and lung cancer hospitalizations** averaged, respectively, 3,561€ and 5,260 € (in no-recurrence), 6,511€ and 7,041€ (in loco-regional recurrence), and 5,175€ and 6,240€ (in metastatic recurrence) per patients (**Figure 3**).

Figure 3. Annualized direct costs during first 2 years after surgery among alive patients - study period 01/2015-06/2019

HEALTHCARE DIRECT COST (Cost per patients, €)	NSCLC Patients without recurrence (N=118)	Patients with loco-regional recurrence (N=13)	Patients with metastatic recurrence (N=86)
Prescriptions of drugs related to lung cancer (mean, SD)	1,132.2 (5230.7)	4,307.0 (7552.3)	9,226.6 (13792.5)
Prescriptions of other drugs (mean, SD)	698.8 (644.5)	931.4 (709.4)	896.5 (911.8)
Visits/tests (mean, SD)	3,561.2 (3022.7)	6,510.9 (2209.7)	5,175.0 (3659.3)
Lung cancer hospitalizations (mean, SD)	5,259.5 (1668.7)	7,041.4 (3275.7)	6,239.3 (3303.9)
Other hospitalizations (mean, SD)	1,062.2 (1985.9)	2,786.5 (3490.7)	2,567.9 (3712.0)
TOTAL	**11,713.9 (6590.4)**	**21,577.2 (9318.6)**	**24,105.3 (14837.1)**

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CONCLUSIONS

This **real-world analysis** provides insights into the epidemiology of eNSCLC, patients' characteristics, and economic burden, in Italy.
About **45% of patients had a recurrence**, and in recurrence patients total direct costs covered by INHS **were almost 2-fold** those of no-recurrence patients.
The results of the present analysis could suggest that for the management of eNSCLC an unmet clinical need remains, and therapeutic optimization at early stages is required to improve the disease's clinical and economic burden.