

QUALITY INDICATORS FOR LUNG CANCER CARE IN CANTON TICINO (SOUTHERN SWITZERLAND), 2015-2016



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OBJECTIVES

The analysis of Quality Indicators (QI) is one of the possible uses for data collected by Cancer Registries. Through data collection, quality control and calculation of the QI, Cancer Registries play an important role in the improvement process of patients' treatment and outcome. In fact, through the periodic calculation of QI, following clinicians' suggestions, up-to-date results are available, translating into short-term benefit for the patients. Lung cancer (LC) is one of the most common cancers in the world and it is the leading cause of cancer mortality worldwide. In Canton Ticino, the most southern part of Switzerland with about 350'000 inhabitants, 250 new cases of LC are registered every year, with a 5-year age-standardized relative survival of 20.8% during the incidence period 2011-2015.

Aim of this study is to analyze four evidence-based QI for LC in Canton Ticino.

RESULTS

During the study period, 420 LC are diagnosed in canton Ticino: 87% (N=367) of them are non-small-cell LC (NSCLC) and 13% (N=53) are small-cell LC (SCLC). The average age of the patients at diagnosis is 70.3±9.8 years. Figure 1 represents the stage distribution of the analyzed LC cases. Definition and results of the QI for LC are presented in Table 1.

MATERIALS AND METHODS

All patients resident in Canton Ticino with a diagnosis of LC during the period 01.01.2015-31.12.2016 are considered. Lymphomas, carcinoids and NOS neoplasms are excluded from the analysis. The definition of the QI is based on the ESMO Clinical Practice Guidelines for LC (Postmus *et al.*, 2017). Each QI is defined through a numerator, i.e. the number of patients who fulfill the specific criteria, and a denominator, i.e. the number of eligible patients. The results are presented as proportion (%) with the relative 95% confidence interval (CI95%), calculated basing on the binomial distribution. The "available case analysis" approach is used, i.e. cases for which we can not retrieve the information in the consulted medical documentation are excluded and classified as "missing".

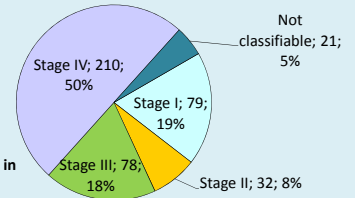


Figure 1. Stage distribution of LC diagnosed in 2015-2016 in Canton Ticino

Table 1. Definition and results of the QI for LC.

QI	NUMERATOR	DENOMINATOR	RESULTS			
			N	%	CI95%	
Q1	Number of patients with non-metastatic LC (M0) receiving a curative treatment (radical radiotherapy or radical chemo-radiotherapy or surgical resection) and having a cytological/histological diagnosis ¹ prior to treatment.	Number of patients with non-metastatic LC (M0) receiving a curative treatment (radical radiotherapy or radical chemo-radiotherapy or surgical resection).	YES	148	84.1%	78.7%;89.5%
			NO	28	15.9%	10.5%;21.3%
			Missing	1		
Q2	Number of patients with stage I-II ² (T1aN0-T2bN1, or T3N0) NSCLC undergoing surgery within 4 months from the diagnosis.	Number of patients with stage I-II (T1aN0-T2bN1, or T3N0) NSCLC.	YES	95	88.0%	81.8%;94.1%
			NO	13	12.0%	5.9%;18.2%
			Missing	0		
Q3	Number of patients with NSCLC undergoing surgery within 4 months from the diagnosis with free margins (R0).	Number of patients with NSCLC undergoing surgery within 4 months from the diagnosis.	YES	102	94.4%	90.1%;98.8%
			NO	6	5.6%	1.2%;9.9%
			Missing	7		
Q4	Number of patients with metastatic SCLC (M1) undergoing chemotherapy.	Number of patients with metastatic SCLC (M1).	YES	29	82.9%	70.4%;95.3%
			NO	6	17.1%	4.7%;29.6%
			Missing	0		

¹ The wedge resection is considered as diagnostic biopsy only if followed by surgery.

² According to the 7th edition of the TNM atlas.

DISCUSSION AND CONCLUSION

Although improvements are possible, for example for Q1, results for the quality of LC care in canton Ticino are generally positive and encouraging. In Figure 2-4 the results obtained in Canton Ticino are compared with other international studies. Despite the presence in the literature of a great number of studies and trials comparing the different chemotherapy protocols, we cannot find comparison data for Q4.

Limits of the present study:

- o few cases of metastatic SCLC, causing larger CI95%;
- o influence on QI results of patients' age, comorbidities and disease stage at the diagnosis;
- o adherence to different/specific guidelines is another confounding factor for data comparison;
- o lack in the literature of standardized definition of the QI;
- o few comparative studies, especially at the population-based level.

Strengths the present study:

- o short-term assessment of the diagnostic and therapeutic process;
- o population-based setting, involving both public and private sectors, ensuring a real description of the regional care system without selection bias;
- o promotion of the culture of Quality of Cancer Care among health care providers;
- o to encourage an increasing and continuous collaboration among Cancer Registries and clinicians.



The mutual collaboration between clinicians and Cancer Registries is fundamental for the definition of useful QI, that are functional for the clinical practice. It is very important that Cancer Registries produce and publish QI results. In fact, only through data comparison there is the possibility to identify the weaknesses in the care system and to implement the necessary corrective actions to improve the Quality of Cancer Care.

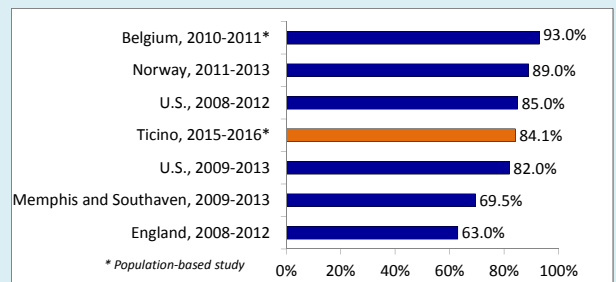


Figure 2: Q1, % of patients with pathological confirmation prior to treatment

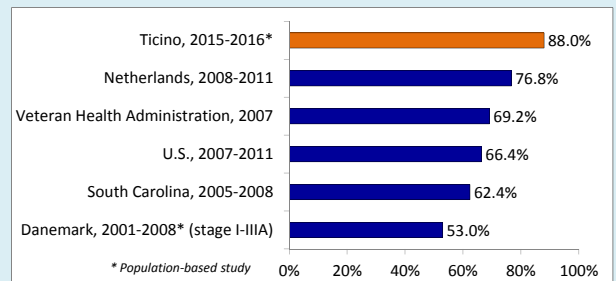


Figure 3: Q2, % of patients with stage I-II NSCLC undergoing surgery

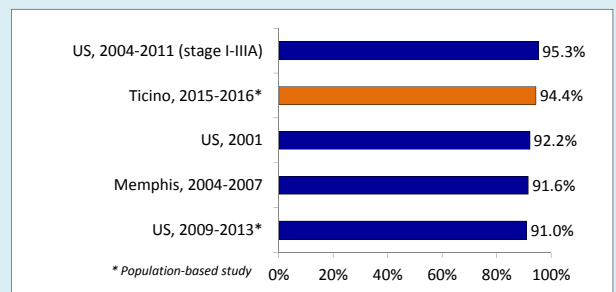


Figure 4: Q3, % of patients with NSCLC operated with free margins

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