

RE-USE OF ROUTINELY COLLECTED ELECTRONIC HEALTHCARE DATA FOR THE EXECUTION OF REAL-WORLD STUDIES ON THE UTILIZATION OF TARGET AND IMMUNOTHERAPIES IN LUNG CANCER PATIENTS: A SYSTEMATIC REVIEW

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Background: During the last decade, pharmacotherapy for patients with lung cancer, particularly non small cell lung cancer (NSCLC), has evolved rapidly due to the authorization of a number of novel anticancer drugs, including target- and immunotherapies. In this contest, re-using routinely collected electronic healthcare data (EHD) to provide information on the real-world utilization of these drugs in large and unselected populations is fundamental in order to complement evidence from clinical trial. The aim of this review is to retrieve and describe published studies based on the re-use of routinely collected EHD that provided information on the real-world utilization of antineoplastic drugs in lung cancer patients

Material and methods: A systematic review of PubMed database was performed to identify all pertinent studies published from 2016 to 2018. Only retrospective, observational studies based on routinely collected EHD that provided information on the real world utilization of target- and immuno-therapies in lung cancer patients were included.

Results: A total of 209 publications were found of which 23 met the inclusion criteria. Only 2 studies were performed in Europe while 16 were performed in the USA. Eleven studies used data from record linkage of medical records, administrative and cancer registry data. The remaining 12 studies used one source of information only among the three above-mentioned data source types. In 4 cases an hospital-based cohort, ranging from 85 to 16.413 subjects, was analyzed. The remaining studies were population-based with a study population size that ranged from 164 to 77.756 patients. Fourteen out of 23 studies, provided information on the molecular characterization of the tumor. Performance status was reported in 9 studies. Most of the studies (19 out of 23) included patients with advanced stage (stage III and IV) NSCLC. The observation period of these studies started between 2005 and 2013 and ended between 2012 and 2016. Only 1 study concerned patients with small cell lung cancer (SCLC), 1 study was about neuroendocrine lung tumors, and 3 studies did not restrict the study to a specific lung tumor subtype. The most common measures of drug utilization for NSCLC were the description of first and second line treatment, and treatment patterns. Switch was described only in 2 articles. The percentage of NSCLC patients treated with first-line platinum-based regimens and tyrosine kinase inhibitors (TKI) ranged from 56% to 85% and from 6% to 23.8%, respectively.

Conclusions: This systematic review highlighted the paucity of published studies on the topic. Notably, only 2 studies were performed in Europe. Record linkage of administrative data, medical records and cancer registries was the most used approach. Information on performance status of patients, which is often fundamental for the appropriate use of target- and immunotherapies, was reported in few studies only.