ECONOMIC BURDEN OF PATIENTS WITH ALK+ MUTATION NON-SMALL-CELL LUNG CANCER AFTER TREATMENT WITH CRIZOTINIB: A CANADIAN RETROSPECTIVE OBSERVATIONAL STUDY

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BACKGROUND

- Lung cancer is a leading cause of cancer mortality and morbidity in Canada, with approximately 25,000 new cases and more than 20,000 deaths each year.1
- While the overall five-year survival rate is 15%, survival varies considerably with stage of disease at diagnosis:2 from 95% for those diagnosed at stage I, to only 5% for those diagnosed at stage IV. Median survival among patients with advanced NSCLC is 4-6 months if untreated, and 8-12 months for patients having received treatment.2
- Non-small cell lung cancer (NSCLC) accounts for 85% of all lung cancers,2 with anaplastic lymphoma kinase (ALK) gene rearrangement mutations in about 4-7% of NSCLC tumors.3
- Crizotinib (Kadcyla®; Pfizer) was the first approved ALK tyrosine kinase inhibitor (TKI) and is a new therapy indicated for the treatment of patients with advanced or metastatic NSCLC, whose tumors are ALK-positive (ALK+).4
- There is limited evidence available on the economic burden associated with advanced or metastatic NSCLC in Canada, and none evaluating the burden among crizotinib-treated ALK+ NSCLC patients.

OBJECTIVES

- To characterize treatment patterns and estimates the economic burden of illness among patients with locally advanced or metastatic ALK+ NSCLC who failed crizotinib therapy in Canada.
- For patients with any utilization of each resource vs. no utilization. For individuals with/without a given characteristic.

METHODS

This was a retrospective cohort study in patients diagnosed during a study period January 2010 to July 2014. A database was developed to capture information from the chart and commercially available National Cancer Institute (NCI) databases of crizotinib treated patients seen at six participating centers. One study center included patients up to May 2014 and another center had a study date up to January 2015.

Inclusion criteria

- ALK+ NSCLC patients
- Diagnosed with metastatic or locally advanced NSCLC
- Diagnosed with ALK+ (ALK+IVS) NSCLC
- At least 18 years of age at the time of first diagnosis of locally advanced or metastatic NSCLC
- AND
- 4. Faced treatment with crizotinib (for crizotinib failure patients)

OR

- Did not receive crizotinib treatment and not enrolled in a clinical trial (for crizotinib naïve patients)

A registry data set was created with all reviewed charts of patients with locally advanced or metastatic ALK+ NSCLC (limited data were collected from all these charts. Detailed data was only collected for eligible patients including data on treatment and response to treatment, resource utilization, end of life care and status at end of study (Figure 1).

Figure 1: Study Design and Data Collection for Retrospective Chart Review of Crizotinib Treated ALK+ Advanced or Metastatic Non-Cell Lung Cancer Patients in Canada

Cost Accounting

- Resource utilization characterization included the number and percent of patients with any utilization of each resource or, no utilization. For individuals with non-zero utilization, the frequency of utilization was characterized by the total number of times they used the resource divided by total follow-up time in months, using a 2-stage approach.

- Resource utilization estimates were not aggregated to cost estimates by multiplying the frequency of resource utilization to unit costs for specific resources. Total individual costs for hospitalizations, ER visits, physician visits, and laboratory and imaging tests were calculated at cost per month and 95% CIs (confidence interval) are reported for costs based on the assumption of a normal distribution.

- To avoid underestimating the costs of treatment, incomplete or censored patients were excluded (n=6).

- Sources of costs: unit costs were retrieved from IMS database (DELTA®), unit costs of physician visits were retrieved from the 2013 Canadian Resource and Costing Guide, unit costs of laboratory services were retrieved from the unit costs of laboratory test directory. Unit costs for adverse events were retrieved from Ontario Case Costing Initiative. For missing unit costs, data from literature was retrieved.

- All costs were reported in 2014 Canadian dollars.

RESULTS

- Overall, 39 patients were screened for eligibility and included in the registry. 39 patients were receiving ongoing treatment with crizotinib and complete data were collected on 49 patients who failed crizotinib treatment and 9 crizotinib-naive patients. Results presented focused on 49 patients who failed treatment with crizotinib.

REFERENCE


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