Background

Nontuberculous pulmonary disease (NTMPD) is a new but emerging global health concern, with important public health implications.1,2 The infection is caused by ubiquitous mycobacteria found in the soil and water.3 Over 350 species of NTM have been identified and Mycobactrium avium complex (MAC) has been reported to be the most common causative agent in NTMPD worldwide.3,4 Treatment of NTMPD consists of a long-term course of multi-drug antibiotic regimen; however, patients who are not responsive to frontline therapy have limited therapy options.3,5 Currently, data quantifying the economic burden of NTMPD are sparse,1,2 and for patients who are refractory to treatment, the economic burden is unknown.

The study objective was to estimate the economic burden of NTMPD in Canada, France, Germany, and the UK, focusing on refractory patients without concomitant cystic fibrosis or tuberculosis, who were infected with MAC.

Methods

Study Design:
We conducted a retrospective observational survey of physicians in Canada, France, Germany, and the United Kingdom (UK), to collect data on health care resource utilization among patients with refractory NTMPD caused by MAC over a 24-month period. Payors, physicians, and patients who were eligible were invited to participate in the study. Eligible patients were defined as those with a confirmed infection with MAC or Mycobacterium chimaera, and those who met criteria for refractory NTMPD and were referred to an additional physician. Eligible patients were also required to have had at least 6 months of prior treatment for their condition before the study period.

Qualifiers physicians were referred eligible patients’ charts to complete an online survey. The survey captured anonymized information about patient’s treatment history for NTMPD-related health care resource utilization. Physicians were asked to extract information from the medical records for up to 3 eligible patients, living or since deceased, who met all of the eligibility criteria in Box 1.

Data relating to medication use and data on diagnostic and post-diagnostic testing for NTMPD were captured from the time of diagnosis to the time of survey completion. Other resource utilization, including hospitalizations, physician visits, specialty care, and other testing, was captured for the 24-month study period prior to survey completion.

Results

In total, 63 physicians provided data (18 from Canada; 16 from France; 13 from Germany; 6 from the UK), on a total of 152 patients, and when pooling the sample across countries, weighted patient counts were 42 from Canada; 42 from France; 50 from Germany; and 43 from the UK.

Table 1. Patient characteristics

Table 2. Patient demographic characteristics

The study captured detailed data on NTMPD-related resource utilization based on patient charts for a relatively large cohort of patients with refractory NTMPD caused by MAC. The data for this study came directly from the charts of physicians who regularly manage NTMPD. The physicians were sampled from various settings, specialties, and geographic regions, allowing the data to provide nationally representative results.

A core challenge of chart reviews is missing or incorrectly extracted or entered data, which was indeed a limitation of the current study.

Disclosures

Sarah Goring, Nancy Reesbrough, Ben Wilson and Janice Watch are employees of ICON plc. Jack Gallagher, Kylee Jean Heap and Francesca Marras are employees of Clarity Pharma Research LLC; Marko Obradovic is an employee of Insmed Germany GmbH. Insmed Incorporated (Bridgehead, NJ) funded this research.

References

Table 3. Characteristics of follow-up

Table 4. Proportion of subjects and average annual utilization of select resources

Table 5. Annual NTMPD-related direct medical costs per patient in Canada, France, Germany and the UK

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