OBJECTIVES

This analysis aims to reproduce a U.K. based study investigating whether there is a risk between angiotensin converting enzyme inhibitors (ACEIs) and lung cancer, among a cohort of U.S. patients, using a real-world approach. Prior biological studies have suggested that ACEIs increase lung cancer risk through bradypneumia accumulation in the lungs.1, 2

METHODS

Real-world data comprised of electronic medical records from approximately 57.2 million U.S. patients were analyzed. Two unique cohorts were defined, with the first comprising of patients treated with ACEIs and the second with patients who were treated with angiotensin receptor blockers (ARBs). In this analysis, the age of the population was restricted to patients aged 16 years or older, with those who had a medical history of less than five years excluded (Figure 1). In addition, patients who had lung cancer prior to the initiation of ACEIs or ARBs were excluded from the analysis, as well as those who had had any other cancers in order to rule out secondary lung cancers (Figure 1). The index event was defined as initiation of either ACEIs or ARBs anytime on or after January 1st, 2000. Medications were defined using the Uniformed codes, CV000-Ace inhibitor and CV005 Angiotensin II receptor blocker. The IC-10 code C81 was used to define the primary outcome, lung cancer, with an observation period between 1 to day to anytime after medication initiation. Measures of association, which include relative risk, a risk ratio and an odds ratio were calculated and propensity score matching was used to balance confounders that were matched on include age and sex, as well as IC-10 - diagnoses for nicotine dependence, alcohol use, BMI, pneumonia, family history of lung cancer and exposure to asbestos (table 2). Propensity scores matched 1:1 using a nearest neighbor greedy matching algorithm with a caliper of 0.02 the standard deviation.

RESULTS

In the real-world analysis of a cohort of U.S. patients, the use of ACEIs was associated with an increased risk for lung cancer, in comparison with use of ARBs. The results of this analysis were in accordance with the findings from the U.K. based study analyzed by Hicks et al. Further analysis of this U.S. cohort could include analyzing risk for lung cancer over different time periods.

CONCLUSIONS

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