Inhaled corticosteroids and the increased risk of pulmonary tuberculosis: a population-based case-control study

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Abstract
Aims: The association between inhaled corticosteroid (ICS) use and pulmonary tuberculosis (TB) development is uncertain. We conducted a population-based case-control study to investigate whether ICS use increases the risk of developing TB. Methods: Tuberculosis patients aged 18 years and older were identified using the National Health Insurance Research Database (NHIRD) in Taiwan between 2002 and 2010. Each TB patient was frequency matched to four control patients according to age, sex and index year. We retrospectively followed up the medications and comorbid medical conditions for the 5 years prior to the index date. We calculated the odds ratios (ORs) and 95% confidence intervals (CIs) of TB development using multiple logistic regression models. Results: Most of the study participants were men (68.7%), and the mean age among the 8091 TB patients and 32,364 comparison participants was 61.3 ± 18.6 years. After adjusting for potential covariates, ICS use caused a 2.04-fold increased risk of developing TB (adjusted OR: 2.04, 95% CI: 1.78-2.33). When considering dose-response and adjusting for potential covariates, ICS and oral corticosteroids (OCS) use remained independent risk factors and exhibited a dose-response relationship of TB development. The multiplicative increased risk of TB was also significant in patients using ICS and OCS compared with patients not using ICS and OCS (adjusted OR: 4.31, 95% CI: 3.39-5.49). Previous TB history exhibited the greatest risk of TB development among the comorbidities (adjusted OR: 8.50, 95% CI: 7.52-9.61). Conclusion: Long-term ICS use may increase the risk of TB.

Keywords
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