In this modern study, we demonstrated that short-term active smoking (<10 pack-years) in young patients with untreated intermittent adult-onset asthma was associated with a decrease in lung function and AHR. The daily smoking frequency (number of cigarettes per day), smoking duration (number of years), and cumulative smoking history (number of pack-years) were significant predictors of decreased lung function, even though the patients were young adults with intermittent asthma. Additionally, the daily smoking frequency remained an independent predictor of marked AHR (HisPC20 <2 mg/mL). Collectively, these findings suggest that there are non-smoking benefits, even for young patients with intermittent adult-onset asthma.

This study showed the effects of short-term smoking (<10 pack-years) on patients with adult-onset asthma and revealed that a cumulative smoking history of <10 pack-years was associated with a reduced lung function, which is not fully responsive to a bronchodilator, and marked AHR. Epidemiological evidence suggests that a smoking history of ≥10 pack-years causes an accelerated decline in lung function in patients with adult-onset asthma. Twenty-three current adult smokers with asthma and prolonged high pack-years (41±23; mean±SD) comprised a population that is at a high risk of severe, life-threatening disease exacerbation, regardless of the relatively short disease duration. Even though our study is not longitudinal, it can be considered as the lower end of a continuum of studies reporting lung function decline in adult patients with asthma and a relevant smoking history. After the study participants inhaled a bronchodilator, there was still a significant difference in lung function between non-smokers and current smokers. This finding confirms an association between short-term smoking duration of <10 pack-years and a future risk of persistent airflow limitation.

Lastly, after adjusting for age, sex, disease duration, and BMI, smoking duration showed the highest R2 in a multiple linear regression analysis. This finding suggests that smoking duration can significantly affect lung function when compared with other smoking parameters (cigarettes per day and pack-years); however, these regression models do not have a high prediction accuracy. This implies that the influence of smoking may vary among individuals.

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