عنوان مقاله:

Inactivated Mycobacterium phlei inhalation ameliorates allergic asthma through modulating the balance of CD۴+CD۲۵+ regulatory T and Th۱۷ cells in mice

محل انتشار:

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خلاصه مقاله:

Objective(s): Th۲ response is related to the aetiology of asthma, but the underlying mechanism is unclear. To address this point, the effect of nebulized inhalation of inactivated Mycobacterium phlei on modulation of asthmatic airway inflammation was investigated. Materials and Methods: ۲۴ male BALB/c mice were randomly divided into three groups: control group (Group A), asthma model group (Group B), and the medicated asthma model group (Group C). Group B and C were sensitized and challenged with ovalbumin (OVA). Group C was treated with aerosol M. phlei once daily before OVA challenge. Airway responsiveness in each group was assessed. All the animals were killed, and lung tissues and bronchoalveolar lavage fluid (BALF) were harvested. Inflammatory response, proportion of Th۱۷ and CD۴+CD۲۵+ Treg cells, and the levels of cytokines were analyzed in lung tissue. Results: The proportion of Th۱۷ cells and expression level of IL۱۷, IL۲۳, and IL۲۳R were increased, while Foxp۳ expression was decreased in Group B. Inhaling inactivated M. phlei inhibited airway inflammation and improved airway hyper-responsiveness, as well as peak expiratory flow (PEF). In addition, it significantly increased Th۱۷ proportion, Foxp۳ level, and the proportion of CD۴+CD۲۵+ Treg cells in lung tissue in Group C. Conclusion: Inactivated M. phlei was administered by atomization that suppressed airway inflammation and airway hyper responsiveness partially via modulating the balance of CD۴+CD۲۵+ regulatory T and Th۱۷ cells.

کلمات کلیدی:

Asthma, Atomization, Mycobacterium phlei, IL-۱۷, Th۱۷, Treg, Airway hyper-responsiveness