

都市大気粉塵は抗原誘発性の好酸球性気道炎症を増悪する

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Objective: Exposure to concentrated ambient particles (CAPs) has been linked to respiratory health problems in people living in urban area. The purpose of this study was to examine whether exposure to CAPs and heated CAPs (H-CAPs) enhances allergic lung inflammation. **Method:** CAPs were collected from dust filter in a building in Beijing and the chemical materials in CAPs were excluded by heat-treatment at 360 °C. ICR mice were administered intratracheally with normal saline (control), H-CAPs, CAPs, ovalbumin (OVA), OVA + H-CAPs and OVA + CAPs, four times at two-week intervals. Th-1 and Th-2 relevant cytokines and chemokines in bronchoalveolar lavage fluid (BALF) and OVA-specific IgE and IgG1 antibodies in serum were measured. Pathological observation was performed in the lungs. **Results:** CAPs only increased neutrophils, in BALF along with pro-inflammatory mediators, such as keratinocyte chemoattractant (KC). H-CAPs and CAPs enhanced eosinophil recruitment induced by OVA in BALF and in the submucosa of the airway, which has a goblet cell proliferation in the bronchial epithelium. The two CAPs synergistically increased interleukin (IL)-5, IL-13, and monocyte chemoattractant protein-3 (MCP-3) in BALF. The enhancing effects were much greater in CAPs than in H-CAPs. The CAPs induced the adjuvant effects to specific IgE production by OVA. **Conclusion:** Our findings suggest that exposure to CAPs can induce the aggravating effect on OVA-associated lung eosinophilia. The magnitude of the inflammatory reaction differed by CAPs and H-CAPs, which may be due to chemical organic materials derived from air pollutant in crude CAPs.