The Effects of Woodsmoke on Murine Alveolar Macrophages

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Abstract

In many rural areas and undeveloped countries, the main source of pollution and particulates is biomass smoke such as woodsmoke (WS). Much is known about the specific health effects of urban particulate matter (PM), however not much is known about the effects of woodsmoke PM. Many epidemiological studies have shown a correlation between WS exposure and respiratory infections, especially in children and individuals with preexisting conditions. It has also been previously demonstrated in our mouse model that post exposure to WS there is decreased bacterial clearance in the lungs. This study will test the hypothesis that the decreased bacterial clearance is due to decreased alveolar macrophage (AM) function.

In the case of seasonal woodland fires, to chronic, in the use of biomass for heating and cooking. The major source of indoor and outdoor atmospheric pollution and particulates is often biomass smoke such as woodsmoke. In rural areas and undeveloped countries, the main source of pollution and particulates is biomass smoke such as woodsmoke (WS). Much is known about the specific health effects of urban particulate matter (PM), however not much is known about the effects of woodsmoke PM. Many epidemiological studies have shown a correlation between WS exposure and respiratory infections, especially in children and individuals with preexisting conditions. It has also been previously demonstrated in our mouse model that post exposure to WS there is decreased bacterial clearance in the lungs. This study will test the hypothesis that the decreased bacterial clearance is due to decreased alveolar macrophage (AM) function.

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