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ROS mechanism and treatment of asthma in the older population

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Asthma, characterized by reversible airflow obstruction and airway hyper-reactivity associated with chronic inflammation, are often observed in younger populations. Although current research primarily focuses on childhood asthma, studies have shown that the mortality rate of asthma is higher in the elderly compared to younger populations due to age-related immunosenescence, underdiagnosis, and inadequate treatment. Asthma that is developed later in life, termed non-atopic asthma, is related to elevated levels of neutrophils in serum and sputum and Th1-type inflammatory responses. However, the pathophysiological and redox mechanisms relating to asthma have not been fully elucidated in the seniors. In addition, few studies have been focused on the aging effect on the progression of asthma. Reactive oxygen species (ROS) have been shown to be involved in inflammatory reactions and the immune response likely due to the immunosenescence in the elderly. The major challenge is to develop an effective therapeutic strategy against asthma in the older populations, as misdiagnoses of such disease to COPD or congestive heart failure can lead to the more serious consequence. Other reactive species such as nitric oxide (•NO) has also been shown to be associated with asthma via nitrosative stress exerted on the airway. Considering the critical roles of ROS in asthma progression, in clinical settings, interplay effects between inflammatory factors, ROS and •NO should be intensively explored. Particularly, it is imperative to establish a consistent guideline to address the increasing asthma incidences in elderly population.

Biography

Zewen Liu is currently a Postdoctoral Reseacher at The Ohio State University Medical Center and an Associate Chief Physician, Associate Director of Medical Affiars from Ezhou Central Hospital of Wuhan University. He has published more than 15 papers in reputed journals and has been serving as an review board member of repute.

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