

**Review:****Excessive accumulation of fine particles may play a crucial role in adolescent spontaneous pneumothorax pathogenesis (#88069)**

Thank you very much for giving me the opportunity to review the paper.

**Summary:**

In this paper, authors attempt to investigate the underlying pathological association of fine particulate matter and primary spontaneous pneumothorax (PSP). For this purpose, authors collected the sample of thirty pulmonary bullae tissues from surgery of the PSP patients (B group). The adjacent normal tissues of the lungs were used as control S group while other 30 normal lung tissues from non pneumothorax disease (NPD) were regarded as the control N group. Authors performed several experiments such as Hematoxylin and eosin (H&E), Wright-Giemsa (W-G), Victoria blue, and immunohistochemical (IHC) staining experiments in order to measure the levels of fine particulate matter, alveolar macrophages (AMs), pulmonary elastic fibers, monocyte chemoattractant protein-1 (MCP-1), and matrix metalloproteinase-9 (MMP-9) in the lung tissues. After running experiments and studying the results, Authors concluded that the overaccumulation of fine particulate matter has a possible role in the occurrence of adolescent PSP.

**Comments:**

Overall, it is a good novel study. It is relevant to the field and important addition to the existing literature. I have few suggestions as follows.

Introduction.

Introduction section is well written. It provides a clear background of the aim of the study.

However, in my opinion, it will be a good idea to add air pollution, and possibly smoking as etiological factors to PSP, especially since authors have mentioned air pollution in the discussion and particularly in conclusion section as well.

Methods and Material:

This section is well documented. All experiments were well-performed well and are well reported.

Discussion.

Discussion section is well written. However, some studies suggest smoking to be a risk factor of PSP. It might be a good idea to include and comment on smoking being a risk factor of PSP as well.

Here is one study as a reference:

Tschopp, J. M., Bintcliffe, O., Astoul, P., Canalis, E., Driesen, P., Janssen, J., ... & Cardillo, G. (2015). ERS task force statement: diagnosis and treatment of primary spontaneous pneumothorax. *European Respiratory Journal*, 46(2), 321-335.

Conclusion.

Conclusion section appropriately and effectively conveys the results of the study.