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# Opium consumption and COVID-19: The urgent need for more evidence

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**Letter to Editor**

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## Editor in Chief

COVID-19 infection has become a highly dynamic research field due to the urgent need for a protective approach. The desire for prompt achievements to tackle COVID-19 pandemic has led to the use of controversial drugs, despite safety concerns.

Traditional medicinal plants have gained popularity in the last few decades owing to their incomparable chemical diversity and novel mechanisms of action. Currently, both Iranian[1] and Chinese[2] traditional medicine purport to be effective to control COVID-19; however, none of them recommends the use of opium to mitigate coronavirus spread and mortality. Opium, the latex extracted from the opium poppy (*Papaver somniferum*), is a complex mixture of chemicals. Its pharmacologically active principles are in its alkaloids. Papaverine, a benzylisoquinoline alkaloid has been shown to have a potent inhibitory effect on the replication of cytomegalovirus, measles, and human immunodeficiency viruses.[3] To date, there are some controversies about the impact of opium on COVID-19. Some bogus claims and rumors in social media and the community speculated that opium use may have a protective effect on getting infected with coronavirus.[4] Also, some contradictory evidence revealed an opposed association between smoking and COVID-19, delineating the fact that nicotine might possess an immunomodulatory effect to diminish the cytokine storm.[5] Thus, there is a newly generated interest in using nicotine as a therapeutic against COVID-19.[4,6] On the other hand, lead, an opium adulterant, that enters the blood circulation in both oral and inhaled opium usage [7,8] was found to exaggerate the host response to viruses, resulting in higher mortality rate.[9]

COVID-19 is rapidly spreading in Afghanistan, the world's largest opium supplier, and Iran's neighbor, where people are turning to older remedies including opium consumption in the hope of overcoming the pandemic.[10] Rumors that the coronavirus has no effect on opioid users have been even extended among educated people. However, these reports did not rely on the available pathogenesis of disease and have severe limitations such as sparse data and lack of evidence-based inference.

Inflammation plays a pivotal role in COVID-19 pathogenesis. In fact, opium smokers exhibit mild to moderate inflammation as defined by an increase in acute- phase proteins (APPs).[11] Also, the plasma levels of IL-6 were higher in opium-addicted subjects.[12] Likewise, the mortality was higher among opium users with COVID-19.[4] This is why controlling the inflammatory response may be as important as targeting the virus.

In conclusion, as of now, substantial studies contributed to elaborating the notion of the pros and cons of opium's protective properties in the coronavirus pandemic. These pieces of evidence are not conclusive to recommend opium consumption for tackling COVID-19, and the contradictory results do not rule out the available claims of its beneficial effects on the pandemic disease. Thus, the efficacy of opium on COVID-19 still requires to be verified.

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