

# Review of: "[Commentary] COVID-19 and Alzheimer's disease, closely related?"

Mikolaj Hurla

**Potential competing interests:** No potential competing interests to declare.

This is an interesting piece of work. Its emphasis on pathogenic microorganisms in Alzheimer's Disease (AD) pathology is quite innovationary. This pathophysiological pathway is not yet fully understood. Furthermore a lot of researchers nowadays put their focus in this area of study meaning that such article has been presented in the right time frame. Additionally the COVID-19 pandemic is one of the most threatening problem in medicine that has affected countless lives. Thus putting emphasis on possible correlation between AD and COVID-19 might serve a crucial role in future research. That being said there are some places in need of correction. Overall there is a lack of a well thought out plan to the whole structure of the text. Each of the given subjects should be given its separate paragraph. Furthermore there is a problem with correct terminology as APO, APOE, APOE4 are used without proper explanation on that matter. Another issue is the lack of clear definition of what long COVID and severe COVID are. Additionally the exact mechanisms in which COVID might affect central nervous system (CNS) is unclear. Further data evaluation is needed to explain possible ways leading to CNS vulnerability. The same is true regarding APOE subject. Some of the details are well written but some are omitted resulting in superficial presentation. Protein S and OAS1 gene are quite interesting as a potential risk factor for both diseases. However the more comprehensive approach is needed.