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

Jerry Colca

Potential competing interests: No potential competing interests to declare.

This is an interesting area to highlight. The interaction between infectious agents and chronic diseases has been generally overlooked and is now come into clearer focus because of the COVID-19 pandemic. As the authors point out, evidence of the connection of infectious disease to AD has existed for some time.

With respect to AD, the connection may be clearest to first point out that inflammation has been recognized as an important aspect of the pathology for some time (e.g. Neuroinflammation in Alzheimer's disease - PubMed (nih.gov)). There has been evidence that a number of pathogens are able to increase neural inflammation and they may arrive at the site of the central pathology through various routes including the potential to travel in sensory neurons e.g. Exogenous Players in Mitochondria-Related CNS Disorders: Viral Pathogens and Unbalanced Microbiota in the Gut-Brain Axis - PubMed (nih.gov).

Interestingly, both acute and post-acute symptoms of SARS-CoV2 infection include sensory phenomena, which could be reviewed. The neurological sequelea may or may not depend on OAS1 and APO4 haplotypes, so this should be discussed in addition to the outline that is discussed in the current version. It should also be made clear that neurological sequelea may or may not include AD. Perhaps there is an involvement of the risk alleles in this respect.

It would be useful to offer an opinion on the best way to follow up on these observations.