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Is periodontal disease a risk factor for developing Alzheimer's disease?

Sim K Singhrao

University of Central Lancashire, UK

Alzheimer's disease (AD) is a neurodegenerative condition that results in a long-term devastating emotional/psychological impact on their loved ones. The neuropathological hallmarks of AD are the deposition of copious amounts of amyloid beta (A β) and hyperphosphorylated tau protein coated neurofibrillary tangles in the brain. For decades, the role of the innate immune system in the etiology of AD was considered less important but the recently discovered inflammatory genes by Genome-Wide association studies driving inflammation in this disease has changed this view. Innate immune inflammatory activity in the AD brain can result from the pathological hallmark A β protein as well as from specific peripheral microbial infections including the sub-gingival bacterial biofilms. Oral spirochetes and *Porphyromonas gingivalis* components such as lipopolysaccharide (LPS), peptidoglycan and genomic DNA have all been detected in the brains of AD following autopsy. The oral pathobionts elicit weak immunostimulatory activity as a consequence of their immune evasion strategies, which aid their survival in the host. The aim of this presentation is to, disseminate new knowledge in the ever expanding field of dentistry with experimental evidence from human AD brains and from experimental models of periodontitis in the *apolipoprotein E* (APOE) gene knockout mice. The possible contribution, specifically of the oral pathobionts *P. gingivalis* playing a role in influencing the development, and progression of AD inflammatory pathology will be highlighted.

Biography

Sim K Singhrao has gained her PhD from Cardiff University, UK. She did her Post-doctoral training from Cardiff University School of Medicine and then from the School of Dentistry. She is currently a Senior Research Fellow at the University of Central Lancashire, exploring the causative relationship of periodontitis and Alzheimer's disease. She has published more than 60 papers in peer-reviewed journals and 4 book chapters. She is currently serving as an Editorial Board Member for *Journal of Alzheimer's Disease*.

sksinghrao@uclan.ac.uk

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