



Does treatment of chronic periodontitis caused by porphyromonas gingivalis reduce the risk of Alzheimer's disease?

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Introduction

Alzheimer's disease is the most common cause and dementia and affects almost 10 million Americans today. Alzheimer's has no cure, which makes researchers keen on studying any possible prevention techniques. Chronic periodontitis is an inflammatory disease in the gums that is caused by harmful bacteria and accompanied by plaque. The most common bacteria found in periodontitis is porphyromonas gingivalis. Many recent studies have suggested that P. gingivalis can contribute to the development of Alzheimer's through inflammation and harmful toxins entering the bloodstream which leads to cognitive decline as well.

Objectives

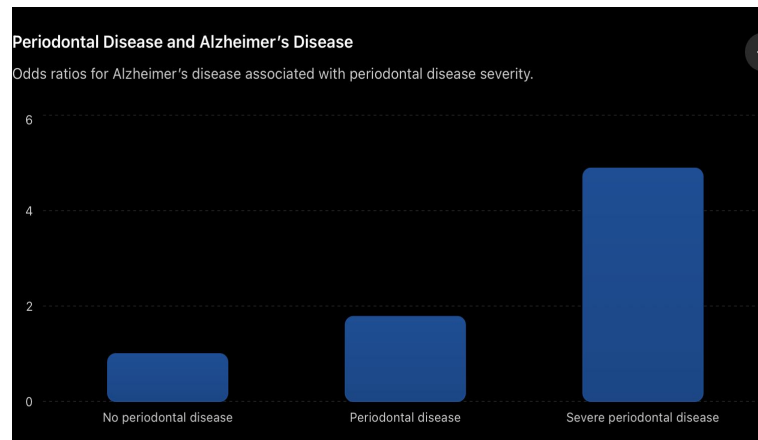
The main objective of this research is to identify the connection between P. gingivalis associated periodontitis and Alzheimer's disease. This study will shine light on how P. gingivalis contributes to Alzheimer's through inflammation and toxins. This research aims to show how treating chronic periodontitis could potentially reduce the risk of Alzheimer's development in adults.

Methods

This research utilized peer reviewed studies involving the relationship between P. gingivalis related periodontitis and Alzheimer's disease. Studies involving brain tissue, animals, and neurons were used to identify biological mechanisms. Biological studies were used to show how harmful plaques cause inflammation which eventually entered the brain causing Alzheimer's.

Results

Studies have generally found a strong association between P. gingivalis, periodontitis, and Alzheimer's disease. Human studies have found that people with P. gingivalis associated periodontitis have a higher risk in developing Alzheimer's and cognitive decline. In a recent study, patients who received periodontal treatment had a 38% lower risk of developing Alzheimer's when compared to no treatment. Many laboratory and animal studies have shown evidence that gingipains in P. gingivalis cause tau tangles, inflammation, and damage in neurons. Specifically, P. gingivalis has been shown to contribute to beta-amyloid plaques developing inside the brain which is a major hallmark for Alzheimer's disease. One study in particular showed how patients with periodontitis who received extensive treatment had a lower risk of developing Alzheimer's when compared to patients who did not receive treatment. Many studies have also shown how oral bacteria has been found inside brain tissue of patients with periodontitis



Discussion

Peer reviews studies show a strong connection between P.gingivalis associated periodontitis and Alzheimer's. Periodontitis, chronic gum disease, can cause long term inflammation and development of harmful bacteria that enter the bloodstreams or reach the brain tissue and damage neurons. Studies also suggest that P.gingivalis can contribute to buildup of beta-amyloid plaques and tau tangles. Both of these being strongly associated with Alzheimer's disease can further prove their association. This evidence however, does not prove a cause and effect relationship and only shows a strong association. More long term studies will be needed in order to actually prove if treating periodontitis will actually reduce the risk of Alzheimer's or decline in cognitive abilities.

Conclusion

In conclusion, P.gingivalis associated periodontitis is likely linked to Alzheimer's disease through beta-amyloid plaques, tau tangles, and chronic inflammation. Many studies have suggested that proper treatment of periodontitis typically reduces the risk of Alzheimer's development which shows how it can possibly be an effective prevention technique. More long term studies will be needed to properly and accurately determine if periodontitis actually contributes to Alzheimer's disease or cognitive decline even though they are highly connected.

References

