Age-related macular degeneration (AMD), is the third leading cause of blindness among the middle-aged and elderly population. AMD is characterized by neovascularization and the formation of lipid drusen that damages the macula in the center of the retina at the back of the eye. Currently, the etiology is unknown and there is no cure for this disease. Oral pathogens that cause inflammation and periodontitis have been linked to various systemic diseases, and the addition of age-related macular degeneration is now one of investigative interest. Vascular endothelial growth factor (VEGF), plays a major role in angiogenesis during the late stages of AMD and is increased in serum and gingival crevicular fluid (GCF) during periodontitis. The goal of this research is to identify vascular endothelial growth factor (VEGF) as a causal risk factor in the development of AMD. Numerous studies have attempted to determine the cause of AMD in relation to periodontitis, though no specific scientific evidence has been established. It is plausible that VEGF signaling as part of the inflammatory response occurs by similar mechanisms in both periodontitis and AMD, making the correlation between the two a reasonable assumption. In this case, the complex nature of the immune response concludes the need for further studies of a correlation between periodontitis and AMD.

On the right, possible correlations between the two diseases are described.

VEGF is needed for regular vascular growth, homeostasis, and tissue repair. In AMD and chronic periodontitis, VEGF increases and triggers angiogenesis, furthering tissue damage.

P. gingivalis, a main pathogen in periodontitis, may alter gene expression and attack epithelial cells in the retina causing AMD.

Micro hollowed spheres made of calcium phosphate hydroxyapatite were identified inside the drusen of donor eyes. These spheres were made of the same material that give teeth and bones their strength, and may be a potential link between AMD and chronic periodontitis.
References


