Resource

Gum disease and RA

A study found new evidence that a bacterium known to cause chronic inflammatory gum infections also triggers the inflammatory “auto-immune” response seen in conditions such as RA.

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A study at Johns Hopkins Hospital has found new evidence that a bacterium known to cause chronic inflammatory gum infections also triggers the inflammatory “auto-immune” response seen in conditions such as rheumatoid arthritis. These new findings could have important implications in the treatment and prevention of RA.

The common denominator identified in gum disease and in many people with RA is a bacterium called Aggregatibacter Actinomycetemcomitans.

A clinical association between gum disease and RA has been observed since the early 1900s, and over time, investigators have suspected that a common factor may trigger both diseases. An infection with this bacterium appears to induce the production of citrullinated proteins, which are suspected to activate the immune system.

Citrullination happens naturally in everyone as a way to regulate the function of proteins. This process becomes disrupted in people who have RA resulting in an abnormal amount of citrullinated proteins. This leads to the creation of antibodies to these proteins leading to the attack on a person's own tissues, causing inflammation.

For this study, a team of experts in periodontal (gum) microbiology/disease and RA began to search for a common link to both diseases. The study showed that a process previously observed in the joints of patients with RA was similar to one occurring in the gums of patients with periodontal disease.

As part of the study, the team developed a test to detect antibodies against the bacterium in blood. Of the 196 patients with RA tested, almost half had evidence of infection with this bacterium. This was similar to data for people with gum disease, but in the group of healthy people, only 11% had a positive test.

Felipe Andrade, senior study investigator and associate professor of medicine at the Johns Hopkins University School of Medicine cautioned that more than 50% of the study participants with RA showed no evidence of infection with the bacterium, which may indicate that other bacteria in the gut, lung or elsewhere could be using a similar mechanism to cause the citrullination of proteins and that more research needs to be done and suggests that: “If we know more about the evolution of both combined (bacterium and disease), perhaps we could prevent [the disease] rather than just intervene.”

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Smoking

Many are aware of the negative effect smoking has on overall health but may not know how it impacts on RA. It can make people more susceptible to developing RA, can worsen RA symptoms and make the medication less effective.