

DNA Tests Whether Bacteria Trigger RA

BY HEIDI SPLETE

FROM THE ANNUAL MEETING OF THE AMERICAN COLLEGE OF RHEUMATOLOGY

ATLANTA – Preliminary data suggest that naturally occurring bacteria in the mouth and intestine may trigger the inflammation that causes rheumatoid arthritis, according to findings presented in a press conference at the meeting.

“We are testing an old hypothesis with new technology,” said Dr. Jose Scher of New York University. The ongoing study is the first to use DNA technology to bypass the cumbersome bacterial culture process. Dr. Scher and colleagues used DNA sequencing to identify all the bacteria present in the mouths and intestines of study participants. This technology finally allows researchers to explore a long-standing theory that oral and intestinal bacteria might trigger RA by activating Th17 cells.

To date, 90 patients have been enrolled in the study, including 55 adults with RA and 35 healthy controls, Dr. Scher said in an interview. Of these, 22 RA patients and 14 controls have undergone DNA sequencing.

When the researchers examined oral microbiota, patients with early-onset RA had three to four times more *Porphyromonas gingivalis* bacteria (implicated in gum disease) than did healthy controls. In general, gum disease is present in approximately 82% of chronic RA patients and 75% of new-onset RA patients, Dr. Scher noted.

In addition, intestinal bacteria associated with inflammation were more prevalent in RA patients, compared with controls. The *Prevotellaceae* species of bacteria was identified in approximately 80% of the RA patients, compared with the 20% usually found in healthy individuals, he said.

The results are preliminary, but the findings support data from previous studies showing a high prevalence of oral disease in RA patients, said Dr. Scher. The study is ongoing, and the next steps for research include using antibiotics to modify the microflora in the body and identify how the bacteria cause inflammation, he added.

The study was supported in part by funding from the National Institutes of Health. Dr. Scher said that he had no financial conflicts to disclose. ■

Bunions and Other Foot Deformities Highly Heritable

BY HEIDI SPLETE

FROM THE ANNUAL SCIENTIFIC MEETING OF THE AMERICAN COLLEGE OF RHEUMATOLOGY

ATLANTA – Got bunions? Thank your parents. Bunions were inherited in 89% of adults younger than 60 years, according to genetic data from more than 2,000 adults.

Bunions and other foot disorders can limit mobility and exacerbate other musculoskeletal weaknesses, but interventions are available, and they are most effective if foot deformities are identified early, said Marian Hannan, D.Sc., of Harvard Medical School, Boston.

Foot disorders occur in 20%-60% of adults. Researchers have long suspected genetic involvement, but this study is the first to examine specific associations between genes and foot deformities, Dr. Hannan said. She and her colleagues reviewed data from 959 men and 1,220 women in the Framingham Foot Study of 2002-2005. A trained examiner evaluated the study participants for any of 20 different foot disorders. In this study, Dr. Hannan reported data about the most common and least common of the disorders: hallux valgus (bunions) and pes cavus (high arches).

In all, 675 individuals (31%) had bunions and 154 (7%) had high arches. A bunion was defined as a high toe an-

gled at least 15 degrees toward the first metatarsal. High arches were identified by calculating weight-bearing arch width.

The researchers used statistical genetics software to determine the heritability of the two conditions. Across all ages, 39% of women and 38% of men inherited their bunions, and 68% of women and 20% of men inherited their high arches. Among individuals younger than 60 years, 99% of women and 63% of men inherited their high arches. The heritability estimates were statistically significant for both conditions. The average age of the study participants was 66 years, and 57% were women.

“Known interventions can slow the progression of disease” for patients with foot problems, Dr. Hannan emphasized. “We are continuing with research within the Framingham Foot Study to look at the other 18 foot conditions,” she added. ■

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Major Finding: Of adults younger than age 60 years who have bunions, 89% inherited the condition.

Data Source: A genetic analysis and foot examination of 2,179 adults.

Disclosures: Dr. Hannan had no financial conflicts to disclose.



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