Recent gut and urinary tract infections may curb risk of rheumatoid arthritis

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Recent gut and urinary tract infections may curb the risk of developing rheumatoid arthritis, suggests research published online in the *Annals of the Rheumatic Diseases*.

One possible explanation could lie in the way in which these infections alter the types of bacteria resident in the gut (microbiome), say the researchers.

They set out to look at the impact of different types of infection on the risk of developing rheumatoid arthritis in almost 6500 people living in south and central Sweden.

Some 2831 of the entire sample had been newly diagnosed with rheumatoid arthritis between 1996 and 2009. The remaining 3570, who were randomly selected from the population, were healthy, but matched for age, sex, and area of residence with the patients.

All participants were asked whether they had had any gut, urinary tract, or genital infections in the preceding two years. They were also asked if they had had prostatitis (inflamed prostate), or antibiotic treatment for sinusitis, tonsillitis/other throat infection, or pneumonia during this time.

The average age of all participants at study entry was 52, and 7 out of 10 of them were women.

Gut, urinary tract, and genital infections within the preceding two years

were each associated with a significantly lowered risk of developing rheumatoid arthritis: by 29%, 22%, and 20%, respectively.

And having all three types of infection in the preceding two years was linked to a 50% lower risk, after taking account of influential factors.

By contrast, no such associations were found for recent respiratory infections and pneumonia.

Factoring in smoking and socioeconomic background made no difference to the overall findings.

More recent infection within the past year did not affect rheumatoid arthritis risk, but the impact of gut, urinary tract, and genital infections within the past two years seemed to be stronger in those who had tested positive for a particular type of protein associated with subsequent development of rheumatoid arthritis (ACPA).

This is an observational study so no definitive conclusions can be drawn about cause and effect.

But the researchers say their findings "are particularly interesting in light of emerging data implicating that the microbiome in the gut may play a role in rheumatoid arthritis pathogenesis."

This might be because the linings of the gut are exposed to a high load of bacterial antigens, which may either initiate or modify inflammation, and so could possibly influence the risk of developing the disease, explain the researchers.

In support of their findings, they point out that the infection sites identified in their study are primarily infected with gram negative bacteria, and antibiotics used to treat these bacteria have proved

effective for treating rheumatoid arthritis.

More information: *Annals of the Rheumatic Diseases*, ard.bmj.com/lookup/doi/10.1136 … rheumdis-2014-206493

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