

Exposure to inorganic dust increases risk of gout in women by 27%

12 June 2019

The results of a study presented today at the Annual European Congress of Rheumatology (EULAR 2019) demonstrate that occupational exposure to inorganic dust is a previously unknown risk factor for gout and also confirm known risk factors, such as alcoholism and obesity.

Gout is caused by deposits of crystals of a substance called uric acid (also known as urate) in the joints, which leads to inflammation. Periods of time when [gout](#) symptoms appear are called flares. Flares can be unpredictable and debilitating, developing over a few hours and causing severe pain in the joints. However, not all people with a high level of uric acid go on to develop the disease. Additional factors, such as genetics, comorbidities, lifestyle or occupation impact who develops gout.

Inorganic dust is made up of mineral based dust such as asbestos, silica and coal. Some occupations involve high [exposure](#) to these substances; such as cleaners, maintenance staff, plumbers, electricians, car fitters, welders, and machinery mechanics.^{2,3,4,5} This [occupational exposure](#) has already been linked to an increased occurrence of other inflammatory rheumatic diseases such as rheumatoid arthritis but this was the first study to look at a potential link with gout.^{6,7,8}

Initial analysis demonstrated a significant association between gout and occupational exposure to inorganic dust in all patients (Odds Ratio: 1.10, 95% confidence interval (CI):1.04-1.17). The association was further analysed using multivariate analysis to adjust for risk factors found to be related to both gout and exposure to inorganic dust within the study. Once this was done, the relationship was attenuated in all patients (OR:1.07, 95% CI:0.99-1.14) but remained significant in women (OR:1.27, 95% CI:1.07-1.51).

"This is the first time occupational exposure to inorganic dust has been shown to be associated with the development of gout," said MD Valgerdur Sigurdardottir, University of Gothenburg, Sahlgrenska Academy, Department of Rheumatology and Inflammation Research, Gothenburg, Sweden. "Further study is needed to understand the dangers of exposure to inorganic dust in relation to gout and other inflammatory rheumatic diseases."

The study included data on known risk factors as possible cofounders to occupational exposure to inorganic dust and multivariate analysis showed that gout was very strongly associated with obesity and alcoholism. Results show that gout is more than twice as likely in alcoholic patients (OR:2.26, 95% CI:1.94-2.62), and more than three times as likely in obese patients (OR:3.75, 95% CI:3.36-4.19).

"Gout is a disabling disease that is very common across Europe," said Professor Thomas Dörner, Chairperson of the Scientific Programme Committee, EULAR. "Identification of risk factors is very important as it allows us to recognise those susceptible to developing the disease and implement early prevention and management strategies."

The study included 6,120 cases who were diagnosed with gout between 2006 and 2012 (with no additional gout diagnoses during the previous six years) from the population-based healthcare database of the Western Swedish Health Care Region. Data on occupation was collected from official registries and a job exposure matrix for inorganic dust previously developed was used to assign exposure status. Each case was matched with up to five controls in the census register by Statistics Sweden based on age, sex, and place of residence who were also employed during the predictor period. Data on predefined comorbidities known to be potential [risk factors](#) for gout

(psoriasis, renal disease, alcohol abuse, obesity and diuretic treatment) were collected and analysed as possible cofounders to occupational exposure to inorganic [dust](#). Analyses were conducted on the whole population and stratified by gender.

Provided by European League Against Rheumatism

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