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Association of Schizophrenia and Autoimmune Diseases: Linkage of Danish National Registers

Several autoimmune diseases, with the notable exception of rheumatoid arthritis, were found to be predictive of a diagnosis of schizophrenia. Autoimmune diseases have been repeatedly linked with silica exposure. However, an acquired autoimmune disease may not be equivalent to one primarily linked to genetic factors.

Previous reports have linked silica exposure to the development of autoimmune disease. The proposed link was recently assessed by the Industrial Injuries Advisory Council. Whilst they concluded that there were insufficient grounds to prescribe any autoimmune diseases in association with exposure to crystalline silica the proposed link was not dismissed and will be kept under review. There was tentative evidence in favour of a link with rheumatoid arthritis.

The current study confirms earlier reports that autoimmune disease was more prevalent in people with schizophrenia.

The study focussed on people who had been diagnosed with an autoimmune disease before being diagnosed with schizophrenia. It was a case (n = 7,704) control (n = 192,590) study.

Nine autoimmune diseases had higher lifetime prevalence among schizophrenia patients than among comparison subjects at a 95% level of statistical significance: thyrotoxicosis, intestinal malabsorption, acquired haemolytic anaemia, chronic active hepatitis, interstitial cystitis, alopecia areata, myositis, polymyalgia rheumatica, and Sjögren's syndrome. The ones underlined were the ones with the largest risk.

A history of parental schizophrenia was a very strong risk factor for autoimmune disease prior to schizophrenia in offspring; incidence rate ratio = 5.0 (95% CI = 4.5 to 5.6), living in Copenhagen (vs rural) and suburbs increased the risk; incidence rate ratio = 2.0 (95% CI = 1.9 to 2.1). No occupational risk factors were assessed.

Rheumatoid arthritis was not predictive of subsequent diagnosis with schizophrenia.

Comment

The findings do not necessarily mean that autoimmune disease causes schizophrenia. There is a reasonable chance that vulnerability factors for autoimmune disease are also risk factors for schizophrenia.

The strongest risk factor for both diseases was parental schizophrenia, followed by residence within the metropolis of Copenhagen. The latter could be an indication of environmental risk.

The negative finding for rheumatoid arthritis confirms earlier results.

If silica is a cause of autoimmune disease then there will be interest in linking schizophrenia to silica exposure. In our view, there is unlikely to be a strong link made between silica and autoimmune disease at exposures within an order of magnitude of the current workplace exposure limit (WEL) [0.3 mgm⁻³.]