

Impaired immune response as cause of rare autoimmune diseases

February 24 2016



World day of Rare Diseases on 29 February 2016

In the context of the multicentre EU project "INTRICATE" under the management of Renate Kain of the Clinical Institute for Pathology of MedUni Vienna, the effects of infections on the generation of rare autoimmune diseases such as granulomatous polyangiitis (GPA), a systemic disease of the vascular system, are examined. The central result: impaired immune response is significantly involved in these diseases.

Patients with autoimmune vasculitis, which auto-immunologically leads to the destruction of small vessels, were examined in order to find out

whether the micro-bacterial infestation of the human body i.e. in nasal mucosa or in case of [urinary tract infection](#) has an effect.

Kain: "Although we were not able to support this hypothesis, the bacterial infestation did not produce significant differences between healthy and diseased test persons. However, it became apparent that the patients' [immune response](#) to the infection was impaired and continuously fuelled by a large number of white blood corpuscles. This causes constant infection processes in the body, which are decisively involved in the generation of these autoimmune diseases." This overt immune response was still active even after the infection had long been overcome.

At the same time, the researchers were able to demonstrate distinct hierarchies within the immune response - from "good" through "bad" up to "evil". "We have furthermore discovered new, further autoantigens which are directed against proteins" says Kain. These new findings could also result in new therapy options for these rare diseases; approx. 40 people per one million citizens suffer from an autoimmune disease such as vasculitis.

Furthermore, so the MedUni Vienna researchers, there is now a very large, unique number of blood samples of more than 400 patients, a "blood database", which could also be helpful to future researches of various [autoimmune diseases](#), due to the current study.

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The World day of rare diseases shall be held next Monday (29.2.). MedUni Vienna focusses on the research of these diseases. Thus, in cooperation with the University Clinics for Dermatology as well as Paediatrics and Adolescent Medicine of MedUni Vienna / AKH Vienna and CeMM Research Centre for Molecular Medicine of the Austrian

Academy for Sciences, a new centre for the interdisciplinary research and treatment of these [rare diseases](#) and non-diagnosed illnesses was founded in 2015 (Vienna Centre for Rare and Undiagnosed Diseases/CeRUD). According to estimations, there are between 6,000 and 8,000 different rare or undiagnosed disorders. Approximately five to eight percent of the population suffers from such disease. This affects approx. 400,000 Austrians.

Provided by Medical University of Vienna

Citation: Impaired immune response as cause of rare autoimmune diseases (2016, February 24) retrieved 24 April 2024 from <https://medicalxpress.com/news/2016-02-impaired-immune-response-rare-autoimmune.html>

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