

## **Autoimmune Diseases Affect Cancer Risk**

**In a recently published study, scientists of the German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ) have calculated the interrelations between autoimmune diseases and cancer of the digestive tract. They discovered that many autoimmune diseases increase the cancer risk, while others, such as rheumatism, are associated with a significantly lower bowel cancer risk. These differing impacts on cancer risk may be attributable to the medications administered.**

An association between autoimmune diseases, in which the immune system attacks the body's own structures, and a higher risk of getting cancer has long been suspected. Kari Hemminki, an epidemiologist at DKFZ, has now studied, jointly with colleagues from Sweden, this interrelation between 33 different types of autoimmune disease and 11 different types of cancer of the whole digestive tract (oral cavity, esophagus, gastrointestinal tract, liver, and pancreas). It turned out that most autoimmune diseases increase the cancer risk in those affected.

Thus, in people suffering from pernicious anemia, a particular type of anemia, the risk of developing gastric cancer is four times higher than in the general population. In patients with Myasthenia gravis, a disorder of neuromuscular transmission, there is an increased occurrence of five different types of cancer. For example, the risk of cancer of the esophagus is three times higher in patients suffering from this relatively rare autoimmune disease; their risk of gastric and bowel cancers is about 30 percent higher than in the general population. In people suffering from Crohn's disease, systemic lupus erythematosus, ulcerative colitis (a chronic inflammatory bowel disease) and psoriasis (a type of chronic skin disease), the investigators also found higher risks for several types of cancer of the digestive tract. By contrast, in rheumatism patients, the epidemiologists observed a 30 percent lower risk of bowel cancer.

A possible cause of the increase or decrease in cancer risk of patients with autoimmune diseases is medication: Many of these diseases are being treated by immunosuppressive drugs. Thus suppressed, the immune system is no longer capable of efficiently fighting tumor cells. This results in a higher cancer risk. Anti-inflammatory drugs, however, may lower the risk of getting cancer. Thus, it was shown that aspirin agent ASS, which is contained in many antirheumatic drugs, can prevent cancer.

Hemminki and his colleagues used the data of the Swedish Cancer Registry, which, encompassing 12 million people, covers the whole population of Sweden. The epidemiologists studied the cases of individuals who were treated in hospital due to an autoimmune disease after 1964 and were diagnosed with cancer by the year 2008. For the first time, the group has also studied data of women and children. The enormous scale of the study has made it possible to include very rare autoimmune diseases and to take a very differentiated look at cancer risks. For Kari Hemminki, the most important conclusion to be drawn from the study findings is: "Doctors should advise their patients with autoimmune diseases to participate in early cancer detection programs regularly."

The German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ), employing over 2,500 staff members, is the largest biomedical research institute in Germany. More than 1,000 scientists are working to investigate the mechanisms of cancer development, identify cancer risk factors and develop new strategies for better cancer prevention, more precise diagnosis and effective treatment of cancer patients. In addition, the staff of the Cancer Information Service (KID) provides information about this widespread disease for patients, their families, and the general public. DKFZ is funded by the German Federal Ministry of Education and Research (90%) and the State of Baden-Wuerttemberg (10%) and is a member of the Helmholtz Association of National Research Centers.

Dr. Stefanie Seltmann  
Head of Press and Public Relations  
German Cancer Research Center  
Im Neuenheimer Feld 280  
D-69120 Heidelberg  
T: +49 6221 42 2854  
F: +49 6221 42 2968  
[presse@dkfz.de](mailto:presse@dkfz.de)