

German Cancer Award for Stefan Pfister

Professor Dr. Stefan Pfister, a molecular biologist and pediatrician, studies the molecular characteristics of brain cancer in children. He discovered changes in the tumor genomes which are already being used in clinical practice as biomarkers for disease progression and treatment response. A number of these mutations also provide approaches for developing new drugs to inhibit specific cancer-promoting processes. Stefan Pfister, who undertakes research at the German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ) and treats children at Heidelberg University Hospital, is distinguished for these achievements with the translational part of the German Cancer Award.

Cancer in children can take very different courses of severity. Since its treatment often entails late adverse effects, it is important to be able to assess the further course of the disease as accurately as possible. This applies especially to brain cancer, because surgery, radiation therapy and chemotherapy may cause lasting damage to the young patients' brains and lead to developmental disorders and other long-term damage.

Brain tumors have taken the place of the more common blood cancers when it comes to cancer mortality in children. The biology of pediatric brain tumors is extremely variable. There are multiple types of brain tumors, which differ not only among each other but also within one and the same type. Customized treatment approaches targeting tumor-specific cellular changes might substantially improve treatment of these cancers.

Stefan Pfister leads the Division of Pediatric Neurooncology at DKFZ and works as a pediatrician at the University Medical Center for Children and Adolescents of Heidelberg University. Pfister and his team are analyzing the genomes of the three most common pediatric brain tumors: low-grade astrocytoma, medulloblastoma and ependymoma. The research is part of the International Cancer Genome Consortium and is funded by the German Ministry of Education and Research and the German Cancer Aid (Deutsche Krebshilfe).

In the past few years, Stefan Pfister and his team have discovered a number of biomarkers for disease progression and treatment response. Some of these are already being applied in the clinic. In addition, they also identified genetic changes that are potential targets for therapy. In more than half of all low-grade astrocytomas, the researchers found a defect in the cancer-promoting BRAF gene. This discovery opens up new treatment options for affected children, because there are already approved substances available inhibiting the mutated BRAF gene.

Medulloblastoma is the most common pediatric brain tumor and is newly diagnosed in more than a hundred patients in Germany every year. Based on a number of characteristic genetic alterations, Pfister and his colleagues were able to classify these cancers into five distinct risk groups. When treating children in the group with the best prognosis, clinicians can now venture to reduce treatment intensity to prevent possible late effects of the treatment. The genetic test can be performed in routine diagnostics and identifies high-risk patients, who would not be identified using conventional tests. These children can receive more intensive treatment from the beginning of therapy to increase their chances of cure.

With the translational part of the German Cancer Award (Deutscher Krebspreis), now in its tenth year, the German Cancer Society (Deutsche Krebsgesellschaft, DKG) distinguishes

research which translates experimental approaches into clinical research. Along with Professor Dr. Stefan Pfister, the second award-winner in the category "Translational Research" was Professor Dr. Roman Thomas from the Max Planck Institute for Neurological Research in Cologne. The experimental part of the German Cancer Award went to Professor Dr. Lars Zender from Tübingen University Hospital and the clinical award went to Professor Dr. Volker Heinemann of Munich University Hospital and to Dr. Alexander Katalinic from Lübeck University. The awards were presented on March 21 during the International AEK Cancer Congress at the European Molecular Biology Laboratory (EMBL) in Heidelberg.

A picture of Stefan Pfister is available at the internet:

www.dkfz.de/de/presse/pressemitteilungen/2012/images/Portrait_Pfister.jpg

The German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ) with its more than 2,500 employees is the largest biomedical research institute in Germany. At DKFZ, more than 1,000 scientists investigate how cancer develops, identify cancer risk factors and endeavor to find new strategies to prevent people from getting cancer. They develop novel approaches to make tumor diagnosis more precise and treatment of cancer patients more successful. The staff of the Cancer Information Service (KID) offers information about the widespread disease of cancer for patients, their families, and the general public. Jointly with Heidelberg University Hospital, DKFZ has established the National Center for Tumor Diseases (NCT) Heidelberg, where promising approaches from cancer research are translated into the clinic. In the German Consortium for Translational Cancer Research (DKTK), one of six German Centers for Health Research, DKFZ maintains translational centers at seven university partnering sites. Combining excellent university hospitals with high-profile research at a Helmholtz Center is an important contribution to improving the chances of cancer patients. DKFZ is a member of the Helmholtz Association of National Research Centers, with ninety percent of its funding coming from the German Federal Ministry of Education and Research and the remaining ten percent from the State of Baden-Württemberg.

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