

Innovative Precision Medicine in Braunschweig

Braunschweig Municipal Hospital has installed a groundbreaking process for molecular tumor analysis using next-generation sequencing (NGS). We spoke to the hospital's medical director, Thomas Bartkiewicz, MD, and the head of the Department of Pathology, Ansgar Dellmann, MD, about the role that tumor analysis plays in oncology at the hospital and about the collaboration with Siemens Healthineers subsidiary NEO New Oncology, which executed the project.

Photos: Peter Sierigk



Colleagues Jens Christmann, PhD, and Horst Hannig, PhD, working in the lab



Next-generation sequencing

In recent years, personalized cancer therapies have brought about a paradigm shift in oncology. The therapies address specific changes in a tumor's genome. This means they are more effective and have fewer side effects than nonspecific chemotherapy. However, changes within the tumor can vary from patient to patient. For a targeted treatment to have the desired results, it is therefore important that physicians understand the molecular properties of the individual cancer. This is why a comprehensive molecular analysis of the tumor profile must precede the treatment itself. Braunschweig Municipal Hospital uses NEO technology for this. Based on next-generation sequencing (NGS), the technology enables fast and efficient parallel multiplex analysis of therapy-relevant changes.

How does molecular tumor analysis fit into the overall direction of Braunschweig Municipal Hospital?

Thomas Bartkiewicz: As a maximum-care hospital in our region, we aim to provide care at the level of a university hospital. In order to live up to this, we have made oncology one of our focus areas and are certified as a national cancer center by the German Cancer Society. We're proud of that, but of course it also motivates us to remain at the cutting edge of diagnostics and therapy. Innovative molecular diagnostics plays a crucial

role in this, because it allows us to offer truly personalized cancer therapies.

Ansgar Dellmann: We've been doing molecular diagnostics in pathology for quite a while now, but now the NGS-based technology has given us a wonderful tool for really providing the best therapies to patients here in the Braunschweig region. Nevertheless, pathologists are obviously still required to identify tumors under the microscope before we perform molecular characterization to be able to deliver the best treatment possible.

How has the use of NGS technology changed things for your submitters?

Dellmann: In some cases, we had to start by communicating the enormous advantages of receiving information about a large number of genetic changes. We've significantly expanded the spectrum of tests we offer for lung cancer, which our submitters are very pleased about. The test results are also included in our hospital tumor conferences, where we discuss the treatment options for our patients.

Why did Braunschweig Municipal Hospital choose NEO New Oncology as its partner?

Dellmann: The key thing for us is that we receive the molecular analysis results in a form that allows us to use them in routine diagnostics. Because the analysis produces large amounts of data, we need to be able to interpret the data quickly and easily here at the hospital. NEO New Oncology offers technology that does just that.

Bartkiewicz: The service culture was also a deciding factor. NEO is a European leader in customer-oriented service.

How have the possibilities offered by the new diagnostics changed the hospital's position?

Dellmann: We can offer very good comprehensive tumor analyses at a university-hospital standard. Obviously we're proud of that, but the most important thing is that we can offer our patients optimal care within a narrow time frame. We don't have to send any tumor samples for testing, which means we don't lose any time and can start treatment as soon as possible.

Bartkiewicz: I think that our use of NGS helps us stand out among municipal maximum-care providers in Germany.

How do you use the technology at the moment, and what are your plans for the future?

Dellmann: We mainly use molecular diagnostics for lung cancer at the moment, but it's very likely to develop in the direction of breast cancer and gastrointestinal cancer. For instance, we've spent a long time supporting a patient who has a typical adenocarcinoma in the lung and has undergone several therapies already.

NEO New Oncology

NEO New Oncology is a subsidiary of Siemens Healthineers based in Cologne. It specializes in solutions for indication-independent analysis of solid tumors. NEO technology enables reliable and highly sensitive detection of therapy-relevant point mutations, small insertions and deletions, copy-number alterations, as well as translocations in oncogenes and tumor suppressors. The hybrid-capture technology includes full bioinformatic analysis of the sequencing data obtained.

For more information, visit newoncology.com



„Our use of NGS helps us stand out among municipal maximum-care providers in Germany.“

Thomas Bartkiewicz, MD
Medical Director, Braunschweig Municipal Hospital



With this patient, NGS allowed us to identify a mutation that means we can put her on a new kind of medication that will help her to survive. Here in Braunschweig, we also sometimes use the method with patients who have colorectal cancer since this type of cancer demands extensive action.

Bartkiewicz: The crucial thing for us is that the partnership with Siemens Healthineers and NEO New Oncology keeps us fit for the future. It allows us to access new fields of indications for molecular tumor diagnostics that are only just emerging.

Dellmann: My wish is that every tumor diagnosed in our hospital is also analyzed with NGS. This will eventually be the case, but I want to achieve the goal as quickly as possible. I think we'll get there in three or four years' time. ●



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Ansgar Dellmann, MD
Head, Department of Pathology
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