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SiemensSays

Viewpoints from Siemens Medical Solutions Executives

Upcoming Issues

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06

Fulfilling the Promise of Molecular Imaging Innovation

Michael Reitermann, President,
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Siemens announced its acquisition of CTI a year ago with the promise of revolutionizing the diagnosis and treatment of disease. Where are you on that promise?

We are driving molecular medicine from promise to practice with a three-tiered strategy to transform the detection and treatment of disease: offer the world's most comprehensive product portfolio, maintain an unmatched depth of expertise, and leverage partnerships with leading research institutions.

In fact, we lead the market in preclinical and clinical imaging, cutting-edge applications, cyclotrons, and PET tracer distribution through PETNET®. The products and applications coming from our year-old Molecular Imaging Division are groundbreaking, not just "pie in the sky" ideas. They are in the field right now, making a real difference by improving the quality of care and reducing the cost of healthcare delivery.

What do you think the healthcare community wants to reap from molecular imaging advancements today and in the future?

The healthcare world wants to gain and use knowledge about the molecular causes of disease in order to provide preventative measures, more predictable and better-monitored treatment, and improved cure rates. Essentially, we are

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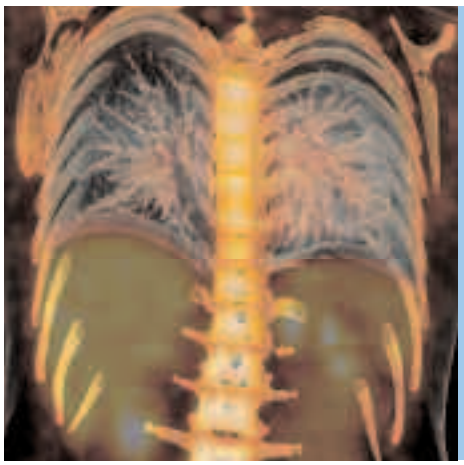
Fulfilling the Promise of Molecular Imaging Innovation (cont.)

moving from treating the illness to treating the patient. Today, biomarker discovery and more sensitive imaging techniques empower early detection of the biochemical precursors of disease and greater diagnostic specificity.

As we look toward the future, the advancements in molecular imaging will couple with advancements in information technologies to provide the healthcare community with enormous databases of disease patterns from anonymous patients worldwide. Physicians will access this deep knowledge base to make decisions about patients' predispositions, diagnosis and treatment. It's all about better care – earlier, personalized, predictive and more cost-effective care.

Has or will Siemens develop molecular technologies that enable the prediction of disease before symptoms appear?
By identifying and tracking disease-related events in the body on a molecular level, we envision molecular medicine will ultimately allow doctors to predict and prevent disease before symptoms occur. For example, Siemens is already working in close collaboration with the University of California, Los Angeles, to develop FDDNP, a diagnostic biomarker to image amyloid plaques that may help identify early indicators of dementia and neurological disorders.

Currently, even the most effective drug therapies for Alzheimer's only slow down the progression of the disease when discovered very early, and a complete cure is not available. An important characteristic of Alzheimer's disease is the accumulation of amyloid plaques in the brain tissue. With imaging biomarkers, such as FDDNP, it will be possible to detect plaques in order to predict the onset of neurological disorders and dementia before symptoms appear. This will not only allow earlier treatment, but also enable the development of better drugs that effectively manage the progression of the disease.



This clinical image, acquired using Siemens Biograph™ TruePoint™ 64-slice PET•CT, shows increased metabolic activity in the vertebral marrow of a lymphoma patient after chemotherapy. The new TruePoint PET•CT platform adds 33 percent more axial volume coverage to Biograph scanners. Enlarging the PET field of view, TruePoint PET•CT technology is able to detect 78 percent more photons, resulting in more precise and detailed images.

What's new in the area of preclinical imaging, and why is this arena important for improved healthcare?
Preclinical molecular imaging enables researchers to identify the pathways of disease and the action of novel therapies in living animals. Siemens' preclinical solutions are facilitating research and accelerating the drug development process, as well as empowering researchers to identify specific biological processes, monitor the efficacy of compounds and measure the effects of disease progression over time.

New solutions, such as our recently introduced Inveon™ platform, are driving medical research from the laboratory to the clinic. Inveon is a new multimodality imaging solution that allows researchers to leverage any combination of Siemens' preclinical hybrid imaging systems and preclinical analysis applications for improved research opportunities.

Why is hybrid imaging among the fastest-growing markets, and what else can we expect in this market?
Hybrid imaging fuses detailed anatomy with functional processes at the molecular level. Because hybrid solutions make it possible to non-invasively pinpoint the exact location, size, nature and extent of disease anywhere in the body, it is no surprise the market is growing rapidly. Beyond disease detection, hybrid imaging's role is also increasing in the area of therapy follow-up. For example, we can use these systems to quickly detect whether a specific chemotherapy is effective for an oncology patient or how fast the chemotherapy is working so that you can administer the appropriate dose to address the tumor.

At this year's Society of Nuclear Medicine meeting, visitors to Siemens' booth saw a revolutionary new PET•CT platform and enhancements to the Symbia® SPECT•CT platform. Siemens has also begun developing groundbreaking technology that combines the advantages of magnetic resonance imaging and PET, which could be pivotal in stem cell therapy research – allowing neurologists to track stem cell location, behavior and make-up to monitor whether and how therapy is working. The possible implications and advantages of future hybrid combinations are beyond our imagination and will continue to surprise us.

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