



ARTIS pheno in cardiology and cardiovascular surgery

Interview of Maik Bittner and Anja Dyck with Prof. Bernhard Schieffer, MD, Director of Cardiology, University Hospital Marburg, Germany, May 10, 2017

Introduction: Keep pace with rapid change

The cardiac landscape for structural heart disease is changing rapidly. Since the first TAVI new generations of valves evolved and indications for transcatheter therapies adopted.

The heart team is facing high-risk patients suffering from frailty, renal insufficiency, respiratory problems and other comorbidities. Proper device selection and optimal implantation are key for superior outcome.

Demanding cases, the complexity of devices and therapy options are calling for the integration of different modalities in one hybrid suite. The imaging system needs to be easy to use, allowing full focus on the implantation by guided workflows and an excellent image quality at the lowest reasonable dose.

ARTIS pheno in cardiology and cardiovascular surgery

The University Hospital of Giessen and Marburg (UKGM) is operating the first ARTIS pheno in cardiology and cardiovascular surgery. As full-service provider the UKGM is taking care of about 300.000 inhabitants. Prof. Bernhard Schieffer, MD, is the director of the Clinic of Cardiology, Angiology and Intensive care at the University Hospital in Marburg. We had the opportunity to ask him about his first experiences with ARTIS pheno after the first month of operation.



**Prof. Bernhard Schieffer, MD,
Director of Cardiology, Angiology and
Intensive care at the University Hospital
in Marburg , Germany**

Prof. Schieffer, how would you describe your typical patient?

Unlike 20 years ago, our typical patient is over 80 years old. They suffer from multiple comorbidities, such as renal insufficiency, cerebral limitations and vascular scleroses in all imaginable variations.

How do you treat these old and sick patients?

We “hit hard and fast,” so to speak. This means: fast intervention, managing risks, utilizing the latest technology and quick discharge from the hospital.

Which interventions do you perform in the hybrid lab with ARTIS pheno?

Together with Siemens Healthineers, we designed this hybrid lab for all cardiovascular interventions, from the lower leg to the carotids. This includes all procedures in structural heart and vascular disease.

What advantages do you see working with ARTIS pheno?

The advantages are countless. All the users, including cardiologists, cardiac and vascular surgeons, state the system can be handled easily and safely. This is especially important for residents and new colleagues.

What was your first impression of ARTIS pheno?

‘Cool’ was my first impression when I finally saw it. And I felt a certain pride, considering the long road from engineering blueprints, layouts, and technical details to reality. We were really excited once we saw the first clinical images.

What is the best thing about ARTIS pheno?

I am a big fan of intra-operative 3D imaging and the different operating modes, such as digital subtraction angiography.

“With ARTIS pheno we have everything in one system customized to our needs: Imaging, software analytics, everything is there – one system for everything.”

You mentioned cardiac surgery as a partner. What other disciplines can benefit from ARTIS pheno?

In the treatment of structural heart disease, cardiology and cardiac surgery are natural partners. Our vascular surgeons are already using the system for EVAR and TEVAR. Furthermore, the neurosurgeons are evaluating the system for coiling and angiographic procedures.

“This system should be used as a true multi-disciplinary system for any patient with a multitude of diseases. This approach is trend-setting, especially with regard to economic efficiency.”

How do you like the new user interface?

The new user interface fits the new generation of physicians. It is designed like an app with a logical structure. And once you grasp that obvious concept, you can configure a multitude of variations to perform one procedure.

How important is infection control in hospitals in general? In this context, what do you think of the antimicrobial coating on ARTIS pheno?

Our infection control management and heart teams consider the system-covers to be very important. The antimicrobial covers are a clear product benefit that triggered our purchasing decision. Infection control is becoming more and more important. If hospitals fail to give it appropriate attention, putting hygiene measures in place in these rooms costs a lot of time.

What is the benefit of 3D-guided procedures?

In cardiac procedures on the mitral and the aortic valve, 3D image fusion helps to save contrast agent and fluoroscopy time. This allows us to treat the oldest and the sickest patients safely.



How do you like the new Multi-tilt table that you can float even in the tilted and cradled position?

The table meets the needs of all disciplines. The cardiologist just needs a table that moves freely in any direction. But when you consider repositioning the patient, tilting and cradling in any direction, heavier patients and the associated hydraulic requirements -- the new table handles it all with ease.

What do you think of the new wide-space C-arm? Do you have more space, more comfort?

The new wide-space C-arm of ARTIS pheno has huge advantages when combined with the large 30 x 40 detector. Almost all standard angulations for coronary angiography can be reached.

You mentioned obese and heavy patients. The new table can hold up to 280 kg. How does this help you in your daily routine?

Heavy patients are a major challenge for the hospital. For example, we have to configure the elevators and the beds accordingly. The number of these patients is growing. The Siemens multi-tilt table is one of the few tables available that can carry this load. It is an excellent investment in the future.

How do you see the future of interventional cardiology with regard to imaging?

"I am deeply convinced that all cardiovascular interventionalists will use such a system in a couple of years. With multi-modal imaging, innovative imaging chains, image fusion and different post-processing technologies in one system, we can manage more complex cases faster and less invasively."

Ready for the world of cardiovascular interventions

Engineered to be truly patient-oriented, ARTIS pheno is a unique angiography system for individualized preprocedural planning, intraoperative guidance, and immediate assessment – regardless of patient condition or procedure complexity. It also helps keep the working environment clean at all times.

No matter which patient

- Live 2k Imaging that visualizes even the smallest details. StructureScout optimizes the visibility of materials, gases, devices, vessels, and background structures independent of procedure or material type
- syngo DynaCT faster than 5 seconds, faster spins of the C-arm to allow more rapid image acquisition with reduced contrast dye injection*
- Repositioning with virtually zero force even with tilted table for patients up to 280 kg with power-assisted tabletop

No matter which procedure

- 95.5 cm of free space with wide-space C-arm for more comfortable working and steep projections
- syngo Aortic Valve Guidance – guided workflow for TAVI helps to potentially double quality in valve positioning** and reduce contrast media usage
- syngo TrueFusion - straight access to fusion of TEE and angio information via the integrated ACUSON SC2000 Ultrasound system that facilitates complex interventions
- Pilot Module ensures intuitive system control with minimal training effort for the users

* Krishnaswamy et al., Cath Cardiovasc Interv, 2015

** Poon et al., Eurointervention, 2012

Because infection control matters

- Antimicrobial covers and a ceiling-free design contribute to a better infection control in the Hybrid OR



syngo Aortic Valve Guidance provides 3D image reconstruction and automatic segmentation. Fusion imaging allows continuous guidance throughout the deployment phase of the valve without additional contrast media usage.



ARTIS pheno in Marburg – a hybrid operating room for multidisciplinary usage

- ARTIS pheno robotic angiography system
- Siemens multi-tilt table with power-assisted tabletop, Pilot Module and lower-body radiation protection
- Two large displays
- Integrated Sensis Vibe hemodynamic recording system

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The statements by Siemens' customers described herein are based on results that were achieved in the customer's unique setting. Since there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, level of IT adoption), there can be no guarantee that other customers will achieve the same results.