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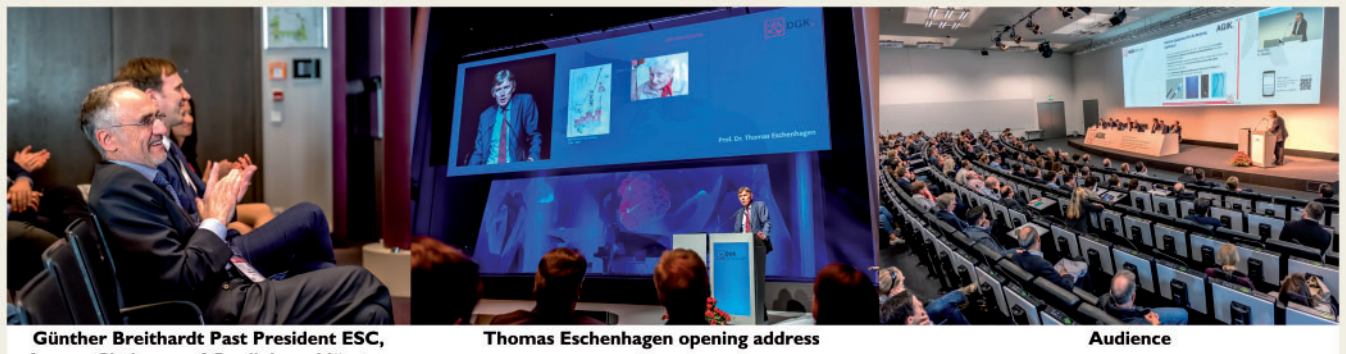
CARDIOPULSE

From basic science to high performance medicine

Highlights from the 84th Annual Meeting of the German Cardiac Society

The 84th Annual Meeting of the German Cardiac Society (DGK)—held on 4–7 April 2018 in Mannheim—celebrated 90 years of translational cardiology under the theme 'Cardiology 2018—From basic science to high performance medicine'. This year's theme reflected the breadth of modern cardiology as well as the tension between the scientific basis of the society and the need for efficient patient care and economic viability.

In his opening address, this year's conference chair Prof. Thomas Eschenhagen reminded the audience of the Society's founding principle and main purpose '*to foster research on the circulation and its organs*'. To do so, the German Cardiac Society was founded in 1927 by Bruno Kisch *et al.* as a society '*open to all scientists and clinicians interested in questions of the circulation with the goal to stimulate interaction between theoretical-scientific and practical medical experiences in this area*'.



Günther Breithardt Past President ESC, former Chairman of Cardiology, Münster | Thomas Eschenhagen opening address | Audience

The founding principles can be viewed as an early definition of translational cardiology, which has been very productive and beneficial during the past decades, with the dramatic reduction in mortality from myocardial infarction as a shining example. However, further progress is necessary as cardiovascular diseases remain the leading cause of mortality and disability in Western societies and represent an increasing burden in the rest of the world.

Further progress requires better understanding of cardiovascular diseases, better prevention and more investment in research. It is threatened by the requirements of modern health management and increasing economic pressure competing with the necessary space for research.

The current president of the DGK, Prof. Hugo A. Katus, stated that this convention is unique not only in consisting of all aspects of cardiovascular medicine from basic science, clinical medicine, and industry, but also in promoting collaboration in science and education in clinical cardiology. It provides a forum both for physicians and scientists from all cardiovascular medical (cardiology, paediatric cardiology, and cardiac surgery) and basic science specialties (molecular cardiology, pharmacology, and physiology). By way of this integrated, interdisciplinary approach and the rather crowded convention centre there is a unique spirit triggering interaction and communication of all parties involved in cardiovascular medicine in Germany.

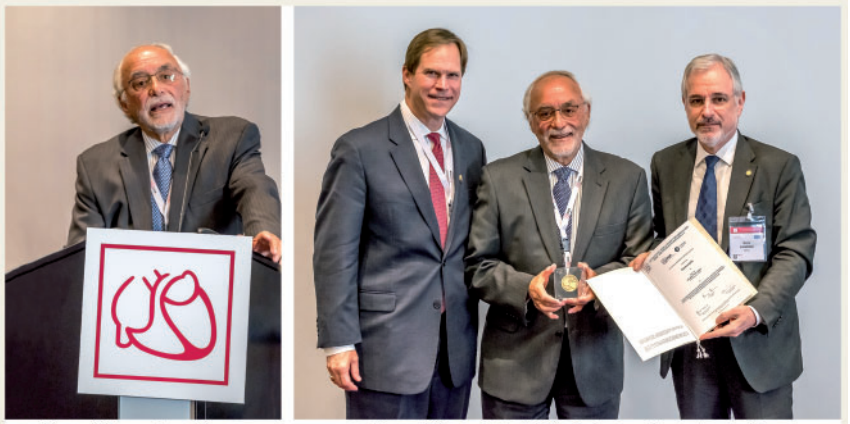
With 355 scientific sessions, 1084 accepted abstracts (out of 1422 submitted) and 8700 participants, the 84th Annual Meeting of the DGK again had a record attendance, manifesting itself as one of the leading platforms for scientific exchange in cardiology in Europe. In the concluding session, highlights of the conference were presented by Prof. Stefan Frantz (heart failure), Dr Ralph Bosch (rhythm disorders), Prof. Volker Schächinger (interventional cardiology), and Prof. Peter Kohl (basic science).

During the opening ceremony, distinguished scientists were presented with awards and prizes of the society including the Arthur-Weber Prize (Prof. Kristina Lorenz), Albert-Fraenkel Prize (Prof. Andreas Zirlik), Paul-Morawitz Prize (Prof. Johann Bauersachs), and the prize of the Fritz-Acker-Stiftung (Prof. Norbert Frey). Early career researchers were bestowed with poster prizes and young investigator awards during the president's evening. Prof. Joseph A. Hill, Dallas, was awarded with the Honorary Award 2018 Lecture on Clinical Science. Prof. Douglas Peter Zipes, Indianapolis, was awarded by the German Chapter of the American College of Cardiology (ACC) with the Gold Medal for Distinguished Service for the cooperation between German and American cardiovascular scientists and his pioneering work in clinical electrophysiology.

The focal topics of the congress were scientific discoveries with translational potential, e.g. non-coding RNAs and the revolutionizing technology of gene editing with CRISPR/Cas9, the use of pluripotent stem cells in cardiac regeneration, the increasing role of big data in research and their potential for personalized treatment concepts, novel therapy, and diagnostic concepts in active development, rare diseases as an example for personalized therapy as well as an update on the newest developments for the treatment of acute coronary syndromes, heart failure, and atrial fibrillation (AF).

Prof. Heyo Kroemer gave an exciting look into the future use of big data in clinical medicine. He differentiated between 'conventional big data', 'unused big data' and 'personal big data', reminding the audience that e.g. current sequencing activities at the German Cancer Centre in Heidelberg generate 11 terabytes per day, almost the same amount of data as the worldwide activity of Twitter (12 terabytes). An example of largely unused big data are data generated in standard hospitals amounting to approximately 0.5 terabytes per day. Making these data available for research is one of the goals of current funding schemes.

The future will also lie in the clinical use of personal data obtained by smartwatches and similar devices that are increasingly suited to continuously monitor individual and patient cohort health data. The congress gave examples of this development. Prof. Marcus Dörr presented results of the WATCH-AF trial, a prospective case-control study in 660 patients with a history of AF that compared simultaneous 5 min recording of a pulse wave with a smartwatch on one arm with an iECG recorded from fingertips. The analysis showed that AF detection using a smartwatch is feasible and offers high specificity. The data therefore suggest that AF screening by smartwatch is feasible without active participation of the person and without adhesive electrodes or accessories.



Doug Zipes at podium

Doug Zipes & Gold Medal award, centre, with Michael Valentine (L), Benny Levenson (R)

Prof. Michael Näbauer presented new analyses from the AFNET Registry on 9582 patients with AF recruited between 2004 and 2006 that showed over a follow-up of 6 years that neither the type/burden of AF nor the number of interventions were associated with outcome. However, the number of risk factors such as LV function and extracardiac factors such as coronary artery disease, pulmonary disease, and diabetes mellitus were important for outcome. The study adds important information indicating that the prognosis of patients with AF is determined by co-morbidities rather than AF itself.

Dr Valeska Abou Molig presented 5 year follow-up data on 73 patients with peripartum cardiomyopathy (PPCM) suggesting that PPCM patients in this German collective have a good prognosis with almost 70% displaying full recovery but may have an increased risk for cardiovascular diseases and other comorbidities later in life. More than 20% of PPCM patients with recovered EF had subsequent pregnancies (9/10 had been treated with bromocriptine). The majority maintained a stable left ventricular ejection fraction and had a favourable pregnancy outcome under close supervision. After 5 years, 75% of the patients still received heart failure medication. Continuous alterations in serum markers of inflammation and angiogenesis suggest impairment in the vasculature and the immune system.

Data presented during the conference indicated that resorbable scaffolds are not yet ready for widespread use. While registry data presented by Prof. Holger Nef indicated a normal rate of major adverse cardiac events, a stent thrombosis rate of 2.7% in 2 years is still high. The technique is under continuous development.

Prof. Holger Thiele presented 6 month data of the prospective multicenter trial CULPRIT-SHOCK, which confirmed that, in patients with multivessel CAD and cardiogenic shock, a 'culprit lesion only PCI' strategy (with possible staged revascularization) resulted in a lower rate of endpoints than immediate multivessel PCI. A similar 'keep it simple' conclusion was drawn by Dr Oliver Husser, who compared patients undergoing TAVR either by general anaesthesia or under local anaesthesia ± conscious sedation (LACS). The evaluation of >16 000 patients in the German GARY registry showed a clear advantage of the LACS strategy in terms of short-term complications, a lower 30-day mortality and a non-significant trend towards lower 1-year mortality. The data indicate that the LACS strategy, currently predominantly performed in more experienced centres, is feasible for broader application.

This year's annual conference of the DGK again presented itself as a major platform for scientific exchange and discussion of trends and open questions in cardiovascular research, prevention and treatment of cardiovascular disease. It portrayed a successful field of modern medicine with challenges that require even more investment in prevention, health care structures and not least, in cardiovascular research.

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