

ASKLEPIOS NEWSLETTER

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Dear Readers,

The heart is a very special organ and much more than a hollow muscle that pumps blood through the body.

In Germany and numerous other countries and cultures, the heart is closely associated with feelings. This is not wholly wrong as it reacts very sensitively to stimuli to the autonomic nervous system.

Heart disease can take an acute and very dramatic course, but it can also begin in a gradual fashion. At Asklepios, the treatment of heart disease has been one of the core skills of our hospitals for many years. Cardiac treatment of the highest standard is kept at the ready in all our

hospitals. Some hospitals far exceed even this level and are among the best in Europe and in some cases the world. Here we help to develop and research new techniques which later all hospitals can benefit from.

In this newsletter, we present three of these hospitals with exceptional cardiology units.

Wishing you the best of health!

Faithfully,

Dr Thomas Wolfram,
Chairman of Asklepios Kliniken GmbH

Clinic operator Asklepios

Asklepios is one of the largest operators of private clinics and healthcare facilities in Germany. Founded more than 30 years ago, the chain of clinics follows a responsible and sustainable strategy geared towards a high level of safety and quality. The group currently has more than 150 healthcare facilities spread across Germany between the Island of Sylt on the North Sea and Lindau by Lake Constance and employs more than 46,000 staff. In the 2015 fiscal year, Asklepios treated around 2.3 million patients.

Medical quality management at the highest level is an area in which Asklepios particularly excels. The clinic operators benefit from the group's structure to promote knowledge transfer between the facilities and to provide particularly excellent treatment. The results are also published regularly. For instance, the Medical Findings Report is published annually at www.qualitaetskliniken.de of which Asklepios is a charter member. Moreover, 25 criteria on patient safety are published regularly on the Internet.

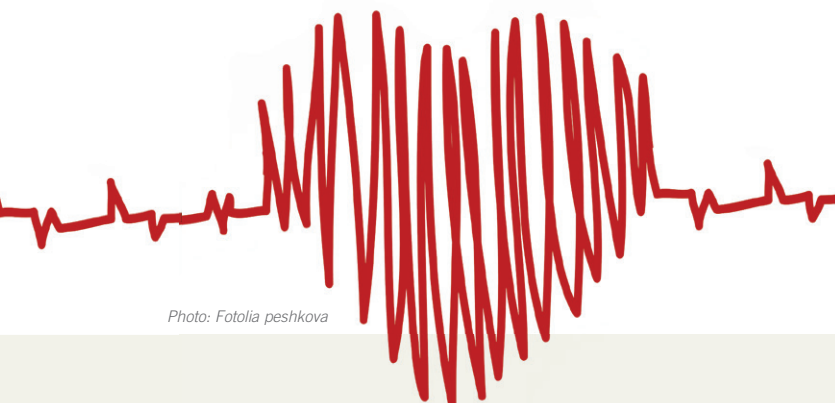


Photo: Fotolia peshkova

CARDIOLOGY

Treating heart failure in good time — in the Asklepios Clinic in Harburg

Cardiac insufficiency or heart failure is one of the most frequent causes of death in industrial countries. More than 20 million people around the world suffer from this serious illness which is characterised by the heart's inability to pump sufficient blood. As a result, the body is not supplied with enough oxygen, and patients complain increasingly of fatigue, shortness of breath, dizzy spells, constant coughing, swollen ankles and legs as well as water retention around the abdomen. Heart failure is usually caused by a different heart disease: In the case of a heart attack, inflammation of the heart muscle, coronary heart disease or hardening of the arteries, heart muscle tissue is destroyed and replaced by scarring with the result that the muscle can no longer pump properly. Doctors speak of systolic heart failure. Diastolic heart failure, on the other hand, is often caused by high blood pressure or damaged blood vessels due to diabetes: The heart muscle tenses and is no longer able to relax. However, both forms of heart failure lead to the same symptoms: shortness of breath on exertion.

Anyone suffering from heart failure needs to receive the right treatment as quickly as possible as this can extend life expectancy by around ten years. In every fourth case, the heart even recovers completely if treated quickly, whilst it is unable to regain its old strength if the disease is already advanced. The severity of heart failure is divided into four stages in accordance with the guidelines issued by the New York Heart Association (NYHA), based on the complaints experienced: NYHA I (initial heart failure with no symptoms) to NYHA IV (difficulties even when resting).

The diagnosis and treatment of heart failure is one of the main areas which the Asklepios Clinic in Harburg, Hamburg focuses on. More than 2,000 patients with heart



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insufficiency at stages NYHA III and NYHA IV are treated here every year by a team of experienced cardiologists under the leadership of Chief Physician Dr. Britta Goldmann. Cardiologists, heart surgeons, lung and kidney specialists, vascular surgeons and many other specialist departments work hand in hand here to cover all aspects of heart failure and to offer the latest treatment methods — from elaborate drug therapies administered under supervision in intensive care, via special pacemakers (CRT, ICD, CCM) to the correction of heart valve defects by catheter (MitraClip, TAVI) or heart operations performed in the hybrid operating theatre. There is also a high-tech support system, the Impella® pump available for the temporary treatment of acute heart failure. This complete range of equipment coupled with the experience of our renowned experts have resulted in more and more patients with heart insufficiency being sent to Hamburg-Harburg to be cared for, even from distant hospitals.

Even if most patients treated for heart insufficiency in the Asklepios Clinic in Harburg are already seriously ill, Dr. Goldmann

and her team attach great importance to detecting structural heart disease as early as possible and giving the appropriate therapy before the heart grows even weaker. Because the earlier this occurs, the more doctors can do for their patients.

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CARDIOLOGY / HEART SURGERY

Repairing defective heart valves by means of a catheter

It was only a few years ago that anyone suffering from a constricted or leaky heart valve would sooner or later have to face up to a major heart operation. But an operation of this nature involving the use of a heart-lung machine is much too stressful and dangerous for many older or seriously ill patients. In many cases, defective heart valves can now be repaired or even replaced inside a beating heart — in a gentle procedure using a catheter. Defective aortic valves, above all, are being more and more frequently replaced by high-tech prostheses introduced by catheter in the groin in a folded state and deployed and anchored at their implantation site (TAVI procedure). Leaky mitral valves are treated by means of various catheter procedures: Either the tips of the two valve leaflets are joined with a clip (MitraClip), or a ring is fitted around the enlarged mitral valve to make the opening smaller.

Specialists at the Cardiovascular Centre in the Asklepios Clinic in St. Georg, Hamburg, are among the pioneers of these techniques, and they participate in numerous international studies intended to refine them. The heart valve programme using the MitraClip was launched here in the Cardiology Department under the leadership of Prof. Dr. Karl-Heinz Kuck in 2008, and a short time later techniques for treating defective aorta valves were added. The experts making up this interdisciplinary team under the leadership of Senior Physician Dr. Christian Frerker can now look back on more than 1,800 TAVI and more than 800 MitraClip procedures. In 2015, the clinic was one of the first TAVI centres to be certified by the German Cardiac Society. Besides their vast experience, the heart specialists in the clinic have an extensive arsenal of different types of prostheses at their disposal with the result that they can select a perfect fit for every patient. This gives them a crucial advantage as sometimes patients'



Photo: Fotolia Monkey Business

anatomies can vary significantly. The progress made in valve technologies and the growing experience amassed by the doctors have steadily expanded the areas of application for minimally invasive procedures in the last few years. While catheter-based procedures were initially reserved for high-risk patients for whom open-heart surgery would be too dangerous due to their age or poor condition, these gentle procedures have now also proven themselves for younger patients without any serious associated illnesses. In one of the first centres in the world, the heart specialists at the St. Georg Asklepios Clinic are now also tackling the catheter-based repair of the tricuspid valve for which there were previously no gentle, catheter-based treatment options whatever. This heart valve with three flaps directs the blood from the right atrium into the right ventricle and is often leaky in patients with heart failure. The result is that patients suffer from an accumulation of fluid in their legs and abdomen and shortness of breath.

Close collaboration between cardiologists and heart surgeons is becoming more and more important to ensure that each patient is treated using the best possible techniques for them personally. In the St. Georg Asklepios Clinic, every patient requiring a new heart valve is discussed in

the so-called "Heart Team", and the various treatment options are explained to them. The Heart Team consists of cardiologists, heart surgeons and cardio-anaesthetists who perform the TAVI procedures together in two special hybrid operating theatres in the clinic. It is crucial for the patient's safety, particularly with these modern techniques, that the cardiologists are supported by an experienced heart surgery department such as that run by Prof. Dr. Michael Schmoeckel at the St. Georg Asklepios Clinic, which is ready to spring into action in the event of complications.

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CARDIOLOGY / HEART SURGERY

Curing cardiac arrhythmia — with a catheter

If the heart repeatedly misses a beat, this is very stressful for the person concerned and in many cases it is associated with a high risk of suffering a stroke. Although cardiac arrhythmia can usually be kept in check with drugs, this means taking pills for one's whole life — and sometimes not even pills will help. Interventional cardiarrhythmology now offers alternative treatments that are often more successful in controlling the heartbeat than drugs and the effect of which is also permanent. The team led by Dr. Matthias Schulze and Dr. Elvan Akin in the Schwalmstadt Asklepios Clinic specialises in the modern catheter procedures of interventional rhythmology, and also uses special pacemakers (ICD, CRTD) for treating congenital or acquired, non-reversible disease of the heart muscle.

Modern computer technology for more successful treatments

Above all, the progress made in computer technology has inspired modern catheter procedures, frequently facilitating new treatment techniques that are now offered in Schwalmstadt. Supercomputers are used to evaluate a flood of electrical signals from the surface of the skin and from inside the heart, generating three-dimensional images that show the specialists the way to the diseased heart muscle cells responsible for the

arrhythmia. These cells are switched off by means of targeted ablation, thus curing the arrhythmia. The introduction of computer systems has significantly reduced patients' exposure to radiation associated with radiology and at the same time made navigation of the catheter in the heart more and more precise. The specialists in Schwalmstadt can now control their catheters to an accuracy of two millimetres which has again significantly improved the success of their treatment.

Too fast a heartbeat can almost always be successfully treated

Up until a few years ago, cardiac arrhythmia with a significantly higher pulse rate could only be treated with drugs which could only be used to a limited extent due to their side-effects. The catheter procedures employed today in the Schwalmstadt Asklepios Clinic permit cardiac arrhythmia to be cured permanently in many cases — without drugs and their side-effects. The success rate for so-called AV nodal reentrant tachycardia which occurs frequently, stands at 98 percent, for example. Catheter procedures for treating atrial flutter and "WPW syndrome" which is characterised by an additional electrical pathway in the heart, enjoy similar levels of success. In the case of so-called focal atrial tachycardia or ventricular arrhythmia, the success rate is 80 percent which although somewhat lower is nevertheless far superior to treatment by drugs.

Atrial fibrillation: Ablation leads to control of the heart's rhythm

The most frequent cardiac arrhythmia is atrial fibrillation which occurs in sudden attacks (paroxysmal). Here the normal rhythmical contraction of the heart is suspended when the atria of the heart no longer have the strength to pump the blood into the ventricles due to extra beats. The origin of these extra beats lies in the pulmonary veins where pathologically altered cells generate electrical pulses and relay them to the atria. This is particularly dangerous because the blood backs up in the atria and blood clots can form in the so-called atrial auricle, an appendage of the right atrium, and these clots can at some point be washed into the brain with the bloodstream and there trigger a stroke. Here, too, catheter procedures can help to solve the problem: So-called pulmonary vein isolation leads to lasting rhythm control in around 70 percent of cases, and a normal sinus rhythm is achieved. Drugs are only successful here in 30-40 percent of cases. If a patient is suffering from permanent atrial fibrillation, catheter ablation may also make sense — although here several interventions are often required to achieve the goal of long-term rhythm control.

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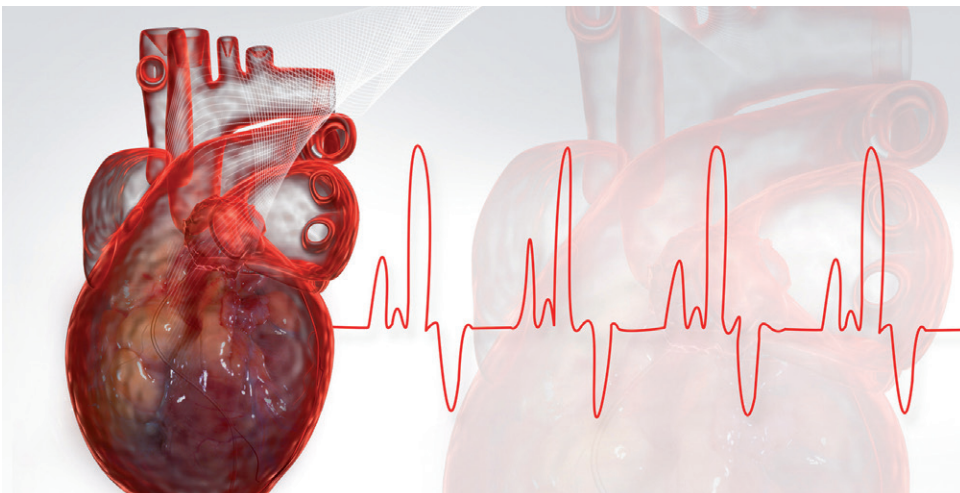


Photo: Fotolia 4designersart

Centres of cardiac treatment with particular expertise



Photo: Asklepios

- Asklepios: acute-care clinic for somatic diseases
- ▲ Asklepios: specialist clinic for psychiatry
- Asklepios: post-acute/rehab clinic
- Asklepios: other healthcare facilities (including day-care hospital, psychiatric outpatient clinics (PIA), health centre, care facility)

* Facility under management

- MediClin: acute-care clinic for somatic diseases
- ▲ MediClin: specialist clinic for psychiatry
- MediClin: post-acute/rehab clinic
- MediClin: other healthcare facilities (including day-care hospital, health centre, care home)

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See also:

Treating Heart Failure

Prof. Dr. Jochen Müller-Ehmsen, Chief Physician for Cardiology, Asklepios Klinik Altona
www.youtube.com/watch?v=E3CQd_GCACU&index=1&list=PLhKoyZAFkGBvAcxXBkcrENTkY1ZGzv0QV

Cardiac Arrhythmia

Priv.-Doz. Dr. Gerian Grönefeld, Chief Physician for Cardiology, Asklepios Klinik Barmbek
www.youtube.com/watch?v=g2cn7R1_u_I&index=3&list=PLhKoyZAFkGBvAcxXBkcrENTkY1ZGzv0QV

Connection between Heart Disease and Strokes

Privatdozent Dr. Alexander Ghanem, Ltd. Senior Physician for Cardiology, Asklepios Klinik St. Georg
www.youtube.com/watch?v=FJ-t5leQ_Fs&index=16&list=PLhKoyZAFkGBvAcxXBkcrENTkY1ZGzv0QV