



Opening Press Conference during HYPERTENSION Berlin 2008

Date: 16th June 2008, 12:30 to 13:30 p.m.

Place: ICC Berlin, room 43

Topics and Speakers:

Model for a medicine of the future: Prevention and research highly effective in combatting hypertension

Professor Dr. med. Detlev Ganten, Hypertension 2008 Congress President, Chairman of the Executive Board, Charité University Clinic, Berlin

New antihypertensive drugs: What are the benefits for the patient?

Professor Dr. med. Thomas Unger, Hypertension 2008 Vice-President, Center for Cardiovascular Research (CCR) and Institute of Pharmacology Charité University Clinic, Berlin

Hypertension guidelines – light in the jungle?

Professor Dr. med. Martin Paul, Dean of the Charité University Clinic, Berlin

What is the target blood pressure in patients with hypertension?

Professor Dr. med. Karl Heinz Rahn, Director of the Medical University Policlinic, University of Münster

New and improved therapeutic strategies for juvenile hypertension

Obesity-induced hypertension and cardiovascular risk in children: New approaches and therapeutic strategies

Professor Dr. med. Dr. h.c. Wolfgang Rascher, Director of the Children and Youth Hospital, University of Erlangen

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Professor Dr. med. Dr. h. c. Wolfgang Rascher

Curriculum Vitae of the speakers

Statistics Hypertension Berlin 2008

Order form for photographs of the speakers

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The importance of prevention and research in combating hypertension

Berlin, 16th June 2008 – Co-hosted by the European and the International Society of Hypertension at the ICC in Berlin from 14th to 19th June 2008, HYPERTENSION 2008 will bring together around 7,000 scientists and physicians from all over the world to discuss the latest findings in the field of hypertension. Some of the main topics are the prevention of strokes, kidney and heart disease and hypertension in the elderly and in developing countries. Speakers from Germany and abroad will also present significant recent studies on hypertension treatment. In plenary sessions experts will be dealing with evolutionary aspects of cardiovascular biology, stem cell therapy, and the worldwide significance of cardiovascular disease.

About 50 percent of the adult population have high blood pressure. An aging population, obesity and lack of exercise are all factors that contribute to the rising incidence of hypertension. Chronic stress and an unhealthy diet are also contributory factors, as is reduced vascular elasticity in the elderly.

The consequences are many and varied: Hypertension sufferers not only have a higher cardiovascular risk, they also tend to develop cerebrovascular disorders, which increase the likelihood of developing vascular dementia.

One of the most important weapons in the battle against hypertension is prevention, a fact that is reflected in the congress program: "The success story of medicinal prevention in combating hypertension is almost unparalleled among the major widespread diseases," comments Professor Dr. med. Detlev Ganten, congress president and chairperson of Berlin's Charité University Clinic. "It should serve as a model for the treatment of the other major widespread diseases, too. Drug-based therapies, for example, significantly reduce the incidence of linked diseases such as stroke and kidney or heart failure. But more than anything, it's lifestyle choices such as eating a healthy diet, maintaining normal body weight, taking regular exercise, reducing alcohol intake, and giving up smoking that significantly reduce the development of hypertension and organ disease," adds Professor Ganten.



The majority of hypertension sufferers, approximately 90 percent, have primary hypertension, i.e. no organic problems such as kidney disease or hormonal dysfunctions of the thyroid or adrenal glands are involved. Besides the above-mentioned contributory causes, hypertension in these patients is frequently triggered by hereditary factors. "This is why fundamental genetic research is so important in developing new forms of diagnostics, prevention and therapy," says Ganten. At the congress experts will also be presenting the latest findings in molecular biology and discussing how best to ensure their transfer into clinic and practice. "Many successes that have been the result of effective and safe drug-based treatments would have been inconceivable, were it not for the excellent research that has been done," emphasizes Professor Ganten.

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Hypertension in old age:

Excessive blood pressure reduction increases coronary risk

Berlin, 16th June 2008 – With advancing age the major blood vessels undergo structural and functional changes. This is why elderly persons tend to suffer from isolated systolic hypertension, a special form of hypertension that is frequently difficult to treat with drugs. Moreover, reducing blood pressure too much in elderly persons suffering at the same time from coronary disease may even be dangerous, warn experts during the International Hypertension Congress 2008 in Berlin.

Any form of hypertension increases the coronary and stroke risk in the long term. For doctors, therefore, there is no question that this condition does require treatment. "Isolated systolic hypertension is at the root of the majority of hypertension disorders in the over-sixties age group," comments Professor Dr. med. Rainer Düsing of the Medical Polyclinic I at Bonn's University Clinic. Persons with diabetes mellitus, elevated blood lipid levels or kidney disorders, as well as smokers, are particularly at risk. But persons with diastolic hypertension – the form of hypertension most prevalent in younger persons – frequently develop systolic hypertension in old age as well. "Older persons, in particular, should be sure to check their blood pressure regularly and seek treatment if it is higher than it should be," advises Düsing. In cases of this kind the choice of blood-pressure reducing drug is decisive for the progression of the disease, for many drugs also reduce the lower, diastolic blood pressure, which is often low in persons with isolated systolic hypertension. A drop to below the normal value can, however, present risks for patients already suffering from coronary heart disease. A study of patients with pre-existing coronary heart disease has shown that reducing the diastolic value to less than 70-80 mmHg increases the risk of myocardial infarction. "We therefore check blood pressure regularly and preferentially use drugs that have been proven to be effective and safe in large-scale studies on elderly people with isolated hypertension," adds Düsing.

In elderly persons atherosclerosis – calcification of the blood vessels – results in an increased hardening of the aorta. It loses its natural ability to expand after each heartbeat and briefly store blood, thereby controlling blood pressure peaks. The experts refer to this as an impairment of the Windkessel function of the aorta. "The result is a marked rise in the upper, systolic blood pressure



value, while the lower, diastolic value is only slightly elevated, or even normal," explains Düsing. For doctors the clue to diagnosing isolated systolic hypertension is increased pulse pressure, namely the difference between the systolic and the diastolic blood pressure. Normally, it is 40 mmHg, but may be significantly higher in old age.

PLEASE NOTE:

Lecture:

Hypertension in the Elderly and Vascular Aging

Thursday, 19th June 2008, 10:30 to 12:00 p.m., Hall 15.2, ICC Berlin

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Antihypertensives now also being tested on and authorized for the treatment of children and adolescents

Berlin, 16th June 2008 – Hypertension is by no means restricted to adults. Children and adolescents may also suffer from high blood pressure that requires treatment. Until recently doctors have only been able to use antihypertensives off-label for the treatment of their young patients. In order to improve the medicinal treatment of children and adolescents, the new EU Regulation on medicinal products for paediatric use (1901/2006/EC) calls for studies on this population group. At the International Hypertension Congress in Berlin in June Experts in the field will be discussing which drugs are also suitable for use on children and adolescents.

"Until recently, almost all hypertension drugs were on the EMEA list of drugs whose use in the treatment of children and adolescents required further testing", comments Professor Dr. Dr. h.c. Wolfgang Rascher of the Department for Children and Adolescents at Erlangen's University Hospital. However, there have always been children who needed treatment for high blood pressure. In small children it is usually caused by congenital blood vessel malformation or kidney disease. In adolescents, like in adults, it is increasingly the result of adiposity and lack of exercise.

"But in pharmacotherapy children must not be treated like "small adults". Above all, even more than other doctors, paediatricians must give consideration to the long-term effects of the drugs they prescribe," warns Rascher. This is why in the past children have usually been treated with beta-blocker antihypertensives. These act by lowering the heart rate and reducing the strength of contractions. They also have the advantage of being easy to dose. "Nevertheless, prescription frequency has dwindled somewhat over recent years because some beta-blockers have undesirable effects on the metabolism, with one result being weight increase, for example," explains Rascher. "For young hypertension patients, who tend to be overweight anyway, this is clearly not recommendable."

Over recent years paediatricians have therefore tended to favor another type of drug, namely ACE inhibitors. "These drugs are more expensive, but act selectively on the body's natural blood pressure regulation system," explains Rascher. Angiotensin antagonists, also known as sartanes, work in much the same way. They are currently being tested extensively on young hypertension sufferers. "This is a very positive development because it enables us to improve the treatment of children and adolescents. It would be advantageous if we could soon have similar studies for the older diuretics as well," says Rascher. For, as



with adults, one single drug is not always enough. Doctors sometimes have to prescribe a combination of several different drugs when treating children and adolescents, too. "The more choice there is," says Rascher, "the more likely we are to find a suitable drug."

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Recognizing the symptoms: Hypertension can be detected early

Berlin, 16th June 2008 – Early-morning dizziness and headaches may be signs of undiagnosed hypertension, as shown by a survey among German GP patients conducted as part of a large-scale study of the treatment of hypertension in Germany. The results refute an opinion widely held among doctors, namely that the patients themselves only seldom realize that they have hypertension.

"Hypertension experts and many doctors see high blood pressure as a silent killer," states Dr. med. Martin Middeke from the Hypertension Center in Munich. The reason for this is that the special risk lies in the fact that patients do not suffer any pain or discomfort from high blood pressure. Consequently, the condition remains undetected until it leads to a heart attack or a stroke. "This is indeed often the case," adds Middeke. "Our study shows, however, that high blood pressure can have symptoms in almost half of those affected and therefore does not have to remain 'silent'". Hypertension sufferers report headaches and dizziness in the early hours of the morning far more than do patients with normal blood pressure. The higher a patient's blood pressure is, the more likely he/she is to report these symptoms. This applies to untreated and treated hypertension patients. Hence, headaches and dizziness may also indicate that high blood pressure has not yet been properly regulated. Women and persons with concomitant diseases develop symptoms more often than others. Tiredness was incidentally reported less by hypertension sufferers than by healthy people. This is possibly another indication that many people with high blood pressure often feel healthy.

Hypertension caused few symptoms in the older participants in the study. Middeke puts this down to the special feature of hypertension disease in the elderly – in this age group it is in many cases only the upper, systolic value that is significantly elevated, while the lower value is normal. And often patients have become accustomed to the elevated values over a period of many years. All the same, treatment is still definitely indicated for isolated systolic hypertension in the elderly as well. "People who suffer dizziness and headaches in the morning should take the symptoms seriously and be sure to have their blood pressure checked," advises Middeke.

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Model for a medicine of the future: Prevention and research highly effective in combatting hypertension

Professor Dr. med. Detlev Ganten, Hypertension 2008 Congress President,
Chairman of the Executive Board, Charité University Clinic, Berlin

Hypertension is especially suited as a model disease for the medicine of the future, as far as both research and therapy development/health care are concerned. What makes hypertension such a special disease?

1. **Hypertension has a high prevalence:** 25 percent of the general public and 50 percent of the over-65s have high blood pressure and, given the ageing population and increasing standard of living, the rising trend is set to continue. Half the hypertension cases in Germany go undiagnosed, however, even though blood pressure is so easy to measure. Efforts must therefore be made to improve awareness among doctors and patients of the significance of high blood pressure.
2. **Research success mean therapy success:** In over 90 percent of patients the cause of the disease is unknown (primary hypertension). As predisposing risk factors, genetic factors play a major role. Advances in basic molecular-genetic research are therefore of primary importance in developing new forms of diagnostics, therapy and prevention. In recent years, especially, hypertension has benefitted – more than most of the other major widespread diseases – from the development of very successful, highly-effective and safe drug-based treatments (Bader and Ganten, 2008). These new radical developments include the direct renin inhibitor Aliskiren (Muller et al., 2008) and a vaccine (angiotensin II) that is still at the development stage (Ambuhl et al., 2007). The Presidential Symposium (14th June 2008, 08:30 a.m. to 18:00 p.m.) will provide a comprehensive update on the latest and upcoming drug therapy strategies (The Renin-Angiotensin-Aldosterone System: Past, Present, Future).
3. **Prevention is simple and highly effective:** General prevention measures (diet, weight control, exercise, cutting out smoking and alcohol) are very effective in preventing hypertension. High blood pressure is an easily measurable parameter and acts as a sensitive barometer of changes in a patient's metabolism. Moreover, treating sufferers effectively makes it possible to prevent secondary diseases such as stroke, renal failure and vascular damage.

Based on overall cardiovascular risk (see the table below), The German Hypertension League now recommends drug treatment for patients with normal blood pressure and a high overall cardiovascular risk. "Watchful waiting" and lifestyle modifications (e.g. giving up smoking) are recommended for all patients with a low or slightly elevated overall cardiovascular risk (www.hochdruckliga.de).

Fig. 2: Overall cardiovascular risk

Blood pressure (mmHg)					
Other risk factors and medical record	Normal SBP 120-129 or DBP 80-84	High-normal SBP 130-139 or DBP 85-89	Stage 1 SBP 140-159 or DBP 90-99	Stage 2 SBP 160-179 or DBP 100-109	Stage 3 SBP \geq 180 or DBP \geq 110
No other risk factors	average risk	average risk	slightly increased risk	moderately increased risk	high risk
1-2 risk factors	slightly increased risk	slightly increased risk	moderately increased risk	moderately increased risk	very high risk
3 or more risk factors or target organ damage or diabetes	moderately increased risk	high risk	high risk	high risk	very high risk
Clinically manifest cardiovascular disease	high risk	very high risk	very high risk	very high risk	very high risk

SBP = systolic blood pressure, DBP diastolic blood pressure

Source: 2007 Guidelines for the Treatment of Arterial Hypertension, German Hypertension League/German Hypertension Society.

4. **Hypertension is highly relevant in terms of health economics:** Hypertension plays a model role, given that it is becoming ever more difficult to maintain an adequate supply of medical services. The prevention of hypertension is a highly cost-efficient measure in terms of both direct and indirect healthcare costs. Hypertension is the leading cause of death worldwide. The prevalence of the disease and the fact that it is relatively easy to control with drugs offer great scope for optimization in terms of health economics. It is the job of health services research to evaluate strategies to make the best possible use of this scope for optimization. Worldwide, hypertension results in approximately 7.6 million premature deaths – 13.5 percent of all premature deaths, as shown by the updated statistics reported in the recently published Global Burden of Disease Study (Lawes et al., 2008). 54 percent of strokes and 47 percent of the cases of coronary disease are attributable primarily to high blood pressure. This means that the condition has a great socio-medical significance. About 80 percent of the attributable burden occurred in low-income and middle-income economies, and 52 percent of hypertension-related deaths occurred in India before the age of 70. In developed countries, on the other hand, only 23 percent of deaths occur by that age. In other words: People in middle-income and low-income countries have a five times higher risk of contracting the disease, but only have access to less than 10 percent of the world's treatment resources.

The prevalence of hypertension, the necessity for and the compelling success of modern research into the fundamentals, translation, clinical practice, and practical application at the level of the individual patient, but also at population level, the existence of effective drug therapies, and the efficacy of preventive measures, make hypertension research one of *the* success stories of modern medicine of the last 30 years, giving it an almost unique position among the major widespread diseases. The successes achieved in the research and combatting of hypertension are therefore an excellent model for the medicine of the future: a major widespread disease with very evident successes in the areas of therapy and prevention.

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(The spoken word prevails!)
Berlin, June 2008

Simple prevention has multiple effects

Professor Dr. med. Detlev Ganten, Hypertension 2008 Congress President,
Chairman of the Executive Board, Charité University Clinic, Berlin

Preventing high blood pressure protects against many other health risks. General prevention measures protect against high blood pressure.

Prevention measure	Effect on blood pressure	Further effects
Losing weight	1 kg = 2 mmHg	Reduces the load on the joints; protects against metabolic syndrome
Exercise / sport	+++	Protects against osteoporosis; acts as an antidepressant
Mediterranean-style diet	+	Protects against atherosclerosis
Less salt	++	Effective against edema
No smoking	+	Lowers the risk of vascular damage, heart attack and lung cancer
No alcohol	+	Lowers the risk of liver disease and car accidents

Effect on blood pressure

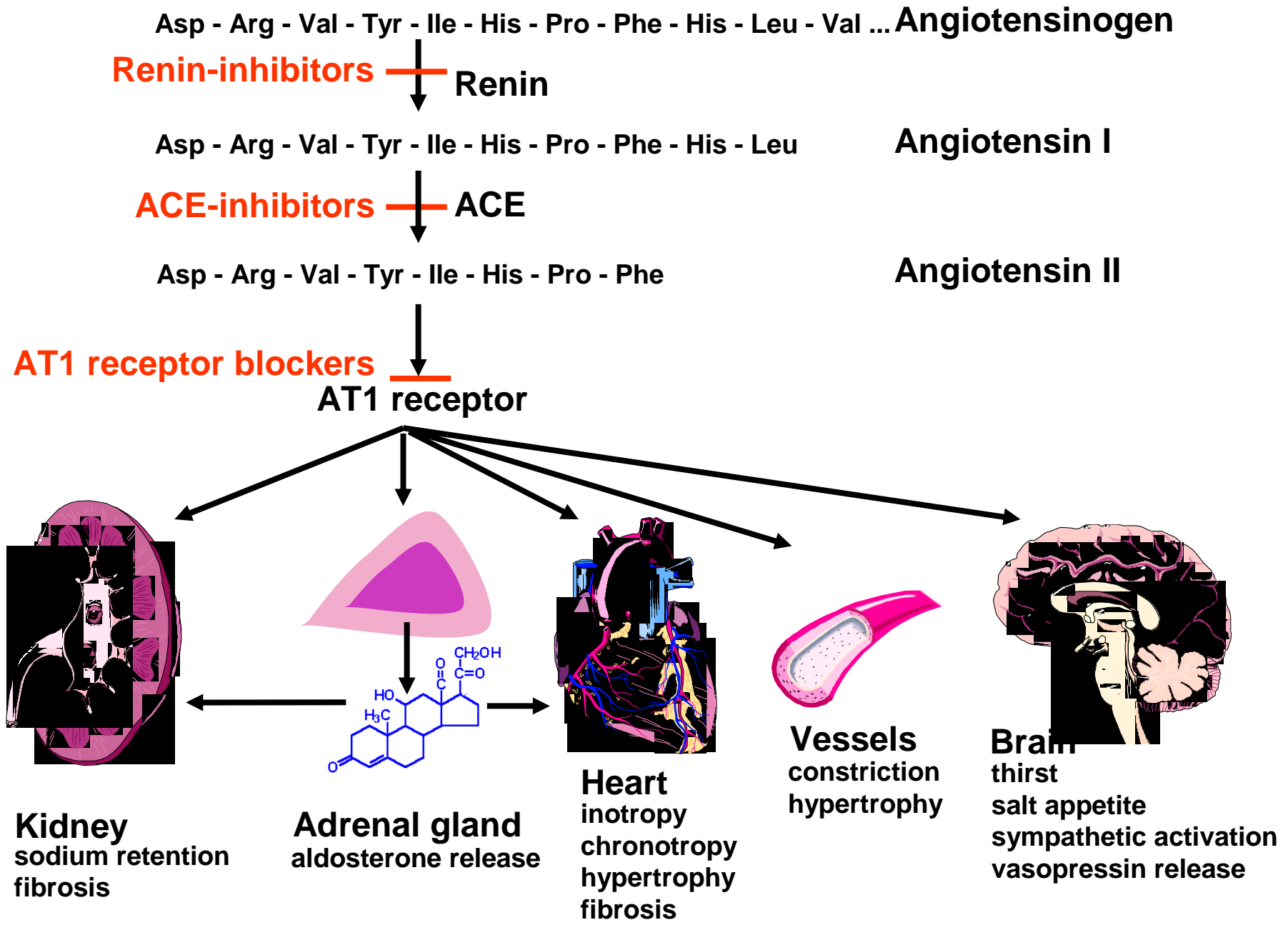
+ = slight effect

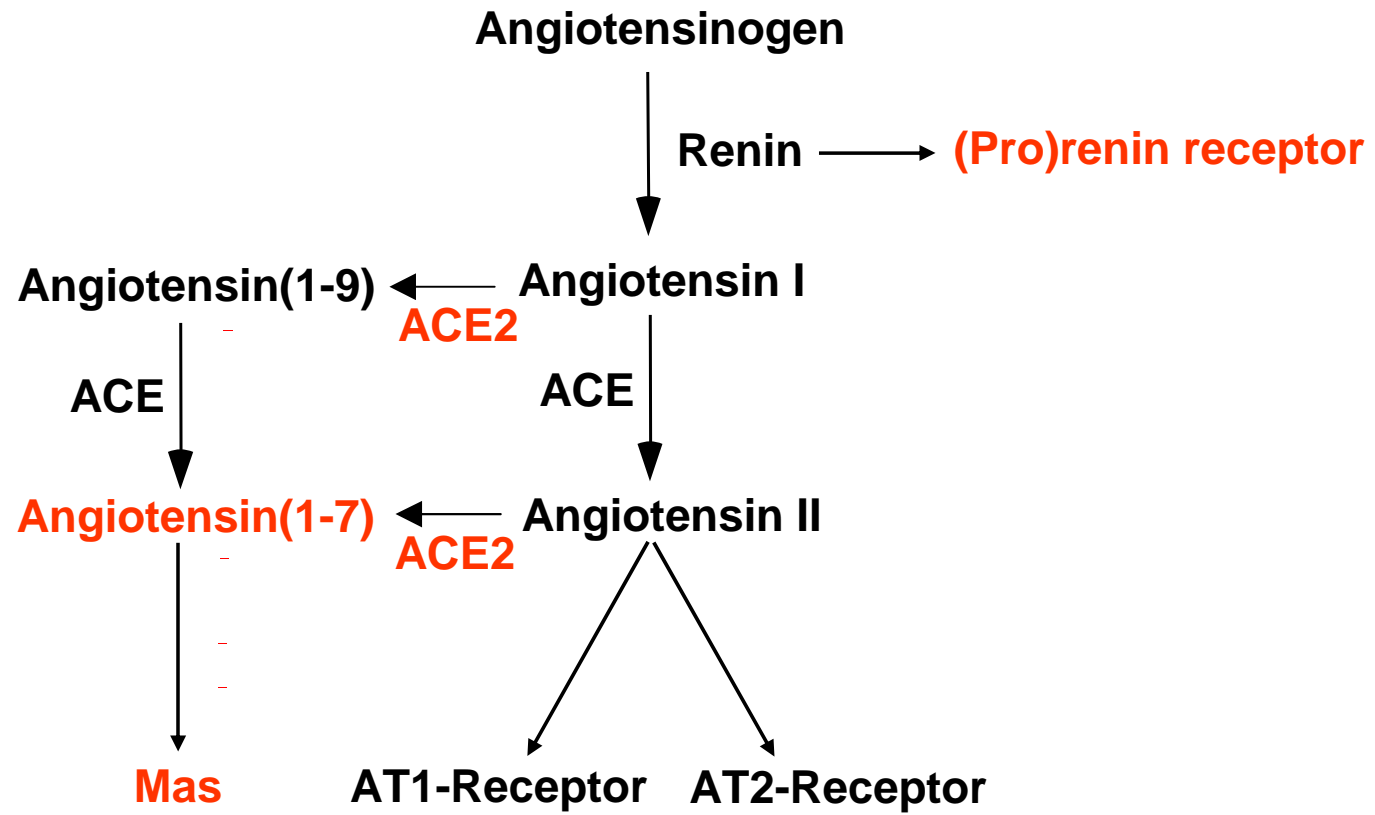
++= medium effect

+++ = substantial/great effect

(The spoken word prevails!)

Berlin, June 2008





**New insights provided by evolutionary (Darwinian) medicine:
The evolution of man and hypertension**

Professor Dr. med. Detlev Ganten, Hypertension 2008 Congress President,
Chairman of the Executive Board, Charité University Clinic, Berlin

Evolutionary medicine sees the organism as the product of four billion years of history and regards diseases as a complex interplay between our genes and the ability of the organism to adjust to the constantly changing environmental conditions. Of prime importance are also “design compromises” between old phylogenies, of which they are primarily composed, and the - relatively speaking - very young evolution of modern man. Evolutionary medicine can make a contribution to our understanding of diseases by analyzing the relationship between current lifestyle habits, prevailing environmental conditions and the evolutionary conditions under which the organism developed certain characteristics.

Examples:

1. During evolution it was an advantage for early man (hunter-gatherer) to retain the salt present in the food he ate and, today, our renal function is still geared towards retaining salt. So, while in terms of evolutionary history our physiology is still programmed for salt retention in a salt-poor environment, we are consuming modern, industrially-produced food with high levels of salt. This causes blood pressure to rise.
2. Diseases that occur in the second half of life, in the non-reproductive phase, are in the “blind angle” of natural selection. Corresponding gene variants are hardly subject to evolutionary selection and can therefore accumulate in the genome. High blood pressure is a typical example of this. In earlier life, a slightly elevated blood pressure may well have a positive effect on the body's efficiency, e.g. increase blood flow to the organs. It is only later in life, in the post-reproductive phase, that high blood pressure brings with it an increased risk of heart failure and stroke.
3. The relative amount of time spent per day in motoric activity and physical exertion has fallen significantly in modern times. It is activity that regulates many gene transcription processes which play a pivotal role in various metabolic processes, which in turn impact on blood pressure. The insufficient combustion of nutrients therefore leads to an increase in blood sugar levels and obesity.
4. In evolutionary terms, our organism's energy utilisation system is still largely geared to the stone age and the difficulty of obtaining enough food. Unhealthy, e.g. overly fatty food, reduces insulin sensitivity even in healthy persons of normal weight. In persons with insulin resistance of this kind, frequently a precursor to diabetes mellitus, insulin excess lowers levels of an important protein that promotes the elimination of salt via the kidneys. This means that the body eliminates less salt, which in turn pushes up blood pressure. Added to which, abdominal fat tissue leads to inflammation factors linked to vascular damage.

Evolutionary medicine therefore places the emphasis on targeted prevention. In medical research this has led to a shift in focus away from the diseases themselves towards vulnerability for disease, i.e. preventing, rather than treating disease. And for this genome research and medical genetics are of critical importance.

For a widespread disease like hypertension, the evolutionary approach offers great scope for optimization, particularly in the area of prevention. Hypertension is a disease that responds extremely well to simple preventive measures (such as a balanced diet). So various different research projects are currently looking into the question of when to begin with the different drug-based and non-drug-based prevention strategies in order to best optimize the discrepancy between man's physiology, which is the result of evolutionary biology, and the living conditions prevailing today. A "natural lifestyle" in this sense means a way of life that has regard both for man's biological evolution and the original function of the body and, from this, making findings as to preventive measures, medical treatment strategies and behavioural guidelines. The basis of this is the fact that evolutionary biology forms the foundation of scientific biology, which in turn is the fundament of all medicine. Evolutionary (Darwinian) medicine therefore provides new insights into the development and treatment of disease.

(The spoken word prevails!)
Berlin, June 2008

New antihypertensive drugs: What are the benefits for the patient?

Professor Dr. med. Thomas Unger, Hypertension 2008 Vice-President, Center for Cardiovascular Research (CCR) and Institute of Pharmacology Charité University Clinic, Berlin

The **development of antihypertensives** was initially focused on CNS-mediated mechanisms of hypertension. A major breakthrough in blood pressure treatment came in 1950 with the development of **reserpin**, where, for the first time, a long-acting and specific antihypertensive drug became available. The importance of this development cannot be overemphasized given the fact that, prior to this time, an effective antihypertensive therapy was unavailable and patients were forced to live with the clinical consequences. In the following years, the critical role of renal mechanisms in salt and water homeostasis for the development and maintenance of hypertension was acknowledged. This knowledge culminated in the creation of **diuretics** – a milestone in antihypertensive drug development that remains among blood pressure therapies routinely used today. Over the subsequent two decades, in addition to the development of centrally-acting drugs (such as alpha-methyldopa or clonidine) which today are only used in specific indications, two major antihypertensive drug categories were created: (1) the **beta- and alpha-receptor blockers**, which resulted from intense research on the role of the sympathetic nervous system in the pathogenesis of hypertension, and (2) the **calcium antagonists**, which intervene in a critical mechanism involved in the local regulation of the vascular tone.

The drug-development phase that followed was almost exclusively marked by the renin-angiotensin system (RAS). Beginning in the 1970s, numerous experiments were performed that aimed at lowering blood pressure by inhibiting the RAS. Initial attempts focused on inhibiting renin whereas other approaches aimed at blocking angiotensin's effect at (as was thought at the time) its single receptor. Both attempts failed mainly due to the fact that it was not possible to produce sufficient amounts of active substances and simultaneously overcome various pharmacokinetic obstacles (bioavailability, etc.). These early failures opened the way for an alternative substance that relied on RAS-inhibition – namely, an inhibitor of the angiotensin II-generating enzyme, the **ACE-inhibitor** which was indicated to treat not only high blood pressure but also most cardiovascular and metabolic disorders. The next ten years were marked by the angiotensin **AT1-receptor antagonists**, the sartans, which work by shutting off the (by now, characterized) angiotensin AT1-receptor, blocking the damaging effects of the RAS, and, if appropriately administered, carry virtually no side effects (similar to a placebo). The recently published ONTARGET study (April 2008) involving 26,000 patients with a high cardiovascular risk including hypertension convincingly showed that the AT1-receptor antagonist, telmisartan, is not inferior to the "gold standard" of ACE-inhibitors, ramipril, in terms of "hard" endpoints and, indeed, has fewer side effects. A last afterglow of this string of successful developments has been the production of new and pharmacologically-improved **renin inhibitors** as well as combined **ACE/NEP (neutral endopeptidase)-inhibitors**. One such renin-inhibitor, aliskiren, was approved for use in 2007 – others are in the process of clinical development. Currently, the therapeutic potential of these drugs can not be fully evaluated. Serendipitously, research on the RAS resulted in an abundance of antihypertensive drugs with low side effects that have proven useful in

treating a host of other disorders – a phenomenon that is not fully understood. In contrast, this was not the case with other hormone systems related to blood pressure, such as those involving vasopressin or endothelin.

Antihypertensive drug development is, thus, close to producing the “**ideal**” **antihypertensive** – a goal described years ago by the pharmacologist Franz Gross (1913–1984), one of the pioneers of hypertension research. Simultaneously, we have reached a provisional peak in hypertension therapy which, in turn, raises the bar for all developments to come. In the absence of new antihypertensive mechanisms of action, current interest is directed towards **defined combinations** of known antihypertensives. For example, if a combination of an RAS-inhibitor with a diuretic has proven to be effective over a period of time, then an attempt is made to combine a RAS-inhibitor with a long-acting calcium antagonist (amlodipine). Such RAS-inhibitors include AT1-receptors and, as recently demonstrated in a clinical study (ACCOMPLISH), ACE-inhibitors. Indeed, in terms of hard endpoints, the latter combination (ACE-inhibitor plus calcium antagonist) proved to be significantly superior to the ACE-inhibitor/diuretic combination. At the same time, the use of beta-receptor blockers for the treatment of uncomplicated hypertension without cardiac disease is decreasing.

The **future of hypertension treatment** is increasingly influenced by the patient's background cardiovascular and metabolic risks. Depending on the individual risk level, a combination therapy with minimal side effects will prevail that will typically contain a RAS-inhibiting substance, calcium antagonists and, additionally, based on risk and needs, a (low-dose) diuretic and a beta-receptor blocker. Additional substances, such as aldosterone antagonists or centrally-working antihypertensives, are indicated in special cases, including so-called therapy-resistant hypertension.

(The spoken word prevails!)
Berlin, June 2008

Invitation to HYPERTENSION BERLIN 2008

Professor Dr. med. Thomas Unger, Hypertension 2008 Vice-President, Center for Cardiovascular Research (CCR) and Institute of Pharmacology Charité University Clinic, Berlin

From June 14-19, 2008, the hypertension world will meet at Hypertension Berlin 2008, joint congress of the International Society of Hypertension (ISH) and the European Society of Hypertension (ESH) in conjunction with the German Hypertension Society. This congress on hypertension and related diseases will attract not only hypertension specialists but also scientists and doctors from all over the world interested in cardiovascular and metabolic diseases. The organisers expect more than 7,000 delegates and have already received more than 2,500 abstracts for the scientific programme. Concerning individual countries, Japan has won the contest by submitting almost 400 abstracts. There will be more than 200 oral presentations covering a wide range of topics around hypertensive pathomechanisms, genetics, animal models and metabolic disease as well as novel therapeutic approaches and clinical trials. Hypertension in developing countries, in pregnancy and in childhood will be intensively dealt with as well as international guideline issues and doctor- and patient-related problems of blood pressure control.

Plenary lectures given by internationally renowned specialists will share the latest results of evidence generating clinical trials and discuss their future, will instruct on stem cell therapy, nuclear factors, micro-RNAs and renin receptors as well as on vascular pathology and on hypertension as a global public health problem. Twelve Breakfast Topical Workshops will deal with the latest news on topics of general interest in hypertension mostly from a clinical perspective, and several Educational Track- and Teaching Sessions will take care of continuous education towards a better understanding of the disease with all its epidemiological, diagnostic and therapeutic implications.

Two controversial debates will fuel hot topics discussions of current hypertension research and therapy: one on central versus peripheral blood pressure, another one on vaccination against hypertension.

In addition to the rich scientific programme, the congress has much to offer. The city of Berlin is one of the most rapidly developing, exciting capitals of the old world with more than 70,000 hotel beds in any desired category. It has a buzzing day and night life, three operas, seven symphony orchestras, over 150 theatres and all the city's treasures are on display in one of the world's largest collections of museums. The congress itself will offer an opening ceremony and welcome reception featuring, amongst other things, a modern dance performance, an exclusive symphony concert at the historical Konzerthaus, and a Museums Evening on the famous Museum Island. Feeling tempted? Then come and enjoy the congress, the unique atmosphere of Berlin and the warm hospitality of its inhabitants: Join us at Hypertension Berlin 2008!

(The spoken word prevails!)
Berlin, June 2008

Hypertension guidelines – light in the jungle?

Professor Dr. med. Martin Paul, Dean of the Charité University Clinic, Berlin

Hypertension guidelines released by various national and international societies can be confusing due to their different format and focus. This is only natural since guidelines are really work in progress having the need to integrate new evidence from clinical trials.

Nevertheless, common recommendations are prevailing in a comparative analysis of different guidelines across the world. This is true for the diagnostic recommendations, where the detailed assessment of early hypertensive target organ damage is a clear focus. This is for example the case in the diagnostic work-up of LVH by electro or echocardiography, the assessment of renal parameters such as glomerular filtration rate and albuminuria and the diagnosis of vascular damage such as the visualization of atherosclerotic plaques.

In comparison of therapeutic recommendations, all guidelines emphasise first and foremost the need to reach target blood pressures, independent of the drug(s) chosen. In general, blood pressure lowering to levels below 140/90 mm mercury is recommended but even lower blood pressures (below 130/80 mm mercury) are on the board in the case of co-morbidity (e.g. diabetes mellitus) or increased cardiovascular risk.

There is wide consensus that first line therapy should use drugs from five classes: diuretics, beta-blockers, calcium-antagonists, ACE-inhibitors and ANG-II-receptor blockers. There are some minor differences: the British guidelines are somewhat more critical of beta-blockers, whereas most other guidelines see them still as essential first line drugs, particularly in the case of co-morbidities, such as heart failure, coronary heart disease, absolute arrhythmia and glaucoma. The choice of the right medication has to be based on risk stratification and should be controlled in regular intervals with an additional focus on side effects and compliance.

Lastly, it should be pointed out that guidelines have left the concept of the stepwise approach to hypertension therapy since combination therapy in addition to monotherapy is recommended particularly for patients with hypertension grade II and III, co-morbidity and increased cardiovascular risk.

(The spoken word prevails!)
Berlin, June 2008

What is the target blood pressure in patients with hypertension?

Professor Dr. med. Karl Heinz Rahn, Director of the Medical University Policlinic, University of Münster

In patients with hypertension, the primary goal is to achieve a maximum reduction of long-term cardiovascular risk. This means that the incidence of stroke, myocardial infarction, sudden cardiac death, renal insufficiency as well as of peripheral artery disease should be reduced as much as possible. To reach this goal, treatment of the raised blood pressure as well as therapy of all associated reversible risk factors, such as overweight and hyperlipidemia, is mandatory. It may be concluded from numerous intervention trials that in all hypertensive patients the elevated blood pressure should be decreased to levels below 140/90 mmHg. The HOT-Study has demonstrated that in the majority of hypertensives further lowering of diastolic blood pressure to levels below 85 mmHg yields no benefit. From the ADVANCE-Study, it may be concluded that not only lowering of the diastolic pressure below 90 mmHg but also decrease of systolic blood pressure below 140 mmHg is essential. There are subgroups of hypertensive patients where the target blood pressure should be below 130/80 mmHg. This is true for hypertensives with diabetes mellitus, for patients with chronic renal failure as well as for patients who have suffered a stroke or a myocardial infarction. Experts recommend to lower blood pressure below 125/75 mmHg in patients with chronic renal failure and a renal protein loss exceeding one gram per day. In order to obtain the target levels mentioned above, in the majority of patients with hypertension combination treatment with two or more antihypertensive drugs is required.

(The spoken word prevails!)
Berlin, June 2008

New and improved therapeutic strategies for juvenile hypertension

Professor Dr. med. Dr. h.c. Wolfgang Rascher, Director of the Children and Youth Hospital,
University of Erlangen

Antihypertensive agents were not approved in children and adolescents until recently. Not only adolescents, also children with high blood pressure need treatment with antihypertensive drugs, and even neonates as consequence of chronic renal diseases. Children have the right for adequately tested drugs. Stimulated by legislation in the USA in the past decade and recently in Europe (EU Regulation 1901/2006/EC) clinical studies with antihypertensive agents are increasingly performed in this particular age group. Thus, the therapeutic potential for high blood pressure in children and adolescents will be improved. Studies with and for children need a different methodological approach compared to adults. Drugs without patent protection can be used in a protective manner exclusively for children and adolescents if paediatric data are obtained in clinical studies (Paediatric Use Marketing Authorization – PUMA). In the future physicians have to prescribe those antihypertensive drugs to children and adolescents that have been studied and authorised in this particular age group.

(The spoken word prevails!)
Berlin, June 2008

**Obesity-induced hypertension and cardiovascular risk in children:
New approaches and therapeutic strategies**

Professor Dr. med. Dr. h.c. Wolfgang Rascher, Director of the Children and Youth Hospital,
University of Erlangen

Whereas the cardiovascular morbidity and mortality is decreasing in adults due to prevention and improved treatment, there is growing evidence that cardiovascular consequences of obesity are present earlier and heavier in children and adolescents compared to the health status ten years ago. This can be demonstrated convincingly with high blood pressure in consequence of increasing adiposity. The prevalence of high blood pressure in children and adolescents is growing as well as the impaired glucose tolerance. The prevalence of hypertension during childhood and adolescence (one to three percent) is estimated nowadays by four to five percent. Exact epidemiological data in Germany will be provided by the "Kinder- und Jugendgesundheits"-Surveys (KiGGS) of the Robert Koch-Institute, Germany. Preliminary data (www.kiggs.de) have shown a prevalence of adiposity of 15 percent, or 1,900,000 children and adolescents in Germany and of obesity of 6.3 percent (or 800,000 out of this population). Based upon reference data obtained ten years ago the figures doubled. Childhood obesity is positively related to hypertension. In contrast to our previous knowledge, arterial hypertension affects the cardiovascular system of children and adolescents. Systolic blood pressure is associated with cardiac hypertrophy, coronary calcifications and increased intima-media-thickness. The damage is more severe when additional risk factors like obesity, dyslipidemia, and smoking are present. Thus, the likelihood for requiring antihypertensive drug therapy is increasing in paediatric patients, including those with renal or cardiac disease, diabetes mellitus, parents with hypertension, or obesity. Preventive measures, e.g. in kindergarden and primary school, blood pressure screening, skilful diagnostic procedures and consequent treatment are necessary to decrease cardiovascular risk in children and adolescent similar as in adults.

(The spoken word prevails!)
Berlin, June 2008

Curriculum Vitae

Professor Detlev Ganten, M.D., Ph.D
Hypertension 2008 Congress President,
Chairman of the Executive Board, Charité University Clinic, Berlin

*1941



Professor Ganten studied medicine in Würzburg, Montpellier (France) and Tübingen and then was a research scientist for several years at the Clinical Research Institute in Montreal (Canada). There, at McGill University, he earned a Ph.D. degree.

In 1975 Detlev Ganten became professor at the Department of Pharmacology of the University of Heidelberg.

From 1991 to 2004 Professor Ganten was the founding director and president of the Max Delbrück Center for Molecular Medicine (MDC) Berlin-Buch. He also was Chairman of the Department of Pharmacology at the Benjamin Franklin Medical Center of the Free University of Berlin.

Since 2004 Professor Ganten is the Chief Executive Officer of the "Charité – Universitätsmedizin Berlin" (Charité – University Medicine of Berlin), the joint medical faculty of the Free University and Humboldt University of Berlin.

As a research scientist in the field of hypertension, Professor Ganten elucidated fundamental mechanisms of the pathophysiology and molecular biology of high blood pressure. His area of research includes the hormonal regulation of blood pressure, especially the renin-angiotensin system, and the molecular genetics of cardiovascular diseases.

Facts and Figures on the Charité Berlin

107 clinics are organized into 17 CharitéCenters

4 Berlin Campi with a total usable area of 610,700 square meters

3,213 hospital beds

The average hospital stay is 7.7 days

The Charité is Berlin's second largest employer

12,800 employees-of these, 4,000 scientists and doctors, 4,700 nurses and caregivers, 800 administrative personnel, and 300 professors

- 5,800 births yearly
- 5,700 operations monthly
- 700 transplantations yearly

- 127,400 inpatient cases yearly
- 500,000 outpatient cases yearly
- billion Euros yearly turnover

- 100 million Euros in third-party funding yearly
- 231 million Euros in subsidies for teaching and research in 2006

More than 50 percent of the Berlin State subsidy for research and education are distributed according to performance. The Charité counts 7,500 students. It also houses seven Graduate Colleges and is the speaker institution for eight Collaborative Research Projects from the DFG. Furthermore, the Charité participates to another five Collaborative Research Projects, three Clinical Research Groups, three Research Groups of the DFG and six Competence Networks of the BMBF.

Curriculum Vitae

Thomas Unger, PhD
Hypertension 2008 Vice-President,
Center for Cardiovascular Research (CCR)
and Institute of Pharmacology Charité University Clinic, Berlin



*1950

Professor Thomas Unger holds the Chair of Pharmacology and is Director of the Institute of Pharmacology at the Charité – Universitätsmedizin Berlin.

From 2001 until 2006 he was Director of the Institute of Pharmacology and Toxicology, Campus Mitte of the Charité Berlin.

He is also the Director of the Center for Cardiovascular Research (CCR) at the Charité, Berlin and the Chairman of the German Institute for High Blood Pressure Research in Heidelberg.

Between 1994 and 2001, he was Director of the Institute of Pharmacology at the University of Kiel, Germany.

Professor Unger studied medicine in Germany and the UK, and gained his MD from the University of Heidelberg, Germany. He then carried out postdoctoral research at the Clinical Research Institute of Montreal, Canada, and the Department of Pharmacology in Heidelberg, where he received his PhD in Pharmacology.

Until 1994, Professor Unger held professorships in pharmacology and hypertension research at the University of Heidelberg.

In recognition of his work, Professor Unger has received the German Hypertension Society's Franz Gross Award for Hypertension Research, the Meilahti Lecture Award of the Medical Faculty, University of Helsinki, Finland, the Björn Folkow Award of the European Society of Hypertension, and the Robert Tigerstedt Award of the Finnish Hypertension Society.

He is a member of the German Societies of Pharmacology, Cardiology and Hypertension (Council Member 1995–2001), the International Society of Hypertension, the European Society of Hypertension (Council Member 1989–97), the European Council for Blood Pressure and Cardiovascular Research (President, 2000–2) and the Inter-American Society of Hypertension. He is also a Fellow of the American Heart Association and was Chairman of the Angiotensin Gordon Research Conference in 1999.

Professor Unger has authored more than 600 scientific publications. He is or has been a member of the Editorial Boards of the *American Journal of Physiology*, *Biochemical Pharmacology*, *Blood Pressure, Cardiovascular Drugs and Therapy*, *Clinical and Experimental Hypertension*, *Hypertension*, *Hypertension Research*, *Journal of Hypertension*, *Fundamental and Clinical Pharmacology*, *Physiological Genomics*, *Regulatory Peptides*, *High Blood Pressure & Cardiovascular Prevention*.

Curriculum Vitae

Professor Dr. med. Martin Paul
Dean of the Charité University Clinic, Berlin



Martin Paul studied medicine at the University of Heidelberg (Germany) and received his M.D, (Dr. med.) degree in 1985.

The studies were followed by a Research Fellowship at Harvard Medical School in Boston, Massachusetts, USA, from 1986–1988, followed by one year as Research Associate at Brigham and the Women’s Hospital. From 1989–1990 he held an appointment as Instructor of Medicine at the Harvard Medical School.

After his years at Harvard he took over a position as Research Associate at the Institute for Pharmacology and Toxicology at the University of Heidelberg in 1990.

In 1994 he was appointed as a lecturer in pharmacology and toxicology at the University of Heidelberg.

After a one year stay as a research group leader at the Max-Delbrück Center for Molecular Medicine in Berlin-Buch he was appointed as a Professor of Clinical Pharmacology at the Freie Universitaet Berlin and moved to the Benjamin Franklin Medical Center of this university in 1995.

In 1997 he was appointed Director of the Institute of Clinical Pharmacology and Toxicology and Chairman of the Department of Toxicology at the same institution. Also in 1997 he was elected Dean of the Medical School at the Free University of Berlin.

Since 2004 Martin Paul is Dean of the Charité Medical School, Berlin.

Scientific Awards:

1978	Scheffel-Preis, Heidelberg College
1986	Redel-Preis, University of Heidelberg
1986–1988	Research Fellowship Award (USA) of the Deutsche Forschungsgemeinschaft
1988–1990	Fellowship Award of the American Heart Association, Massachusetts Affiliate, USA
1992	Walter-Clawiter-Preis for Hypertension Research, University of Düsseldorf
1993	Young Investigator Award, 3rd International Meeting on Endothelin, International Scientific Fellow, High Blood Pressure Council, American Heart Association
1994	Research Award of the Benjamin Franklin Medical Center
1995	Albert-Fraenkel-Preis, German Cardiac Society
2001	Schmiedeberg Award, German Society for Experimental and Clinical Pharmacology and Toxicology
2001	Franz-Gross-Wissenschaftspreis für Hypertonieforschung
2002	William Harvey Lecturer, University of Padua
2004	Vice Chairman, Gordon Conference on Angiotensin
2007	Chairman, Gordon Conference on Angiotensin

Curriculum Vitae

Professor Dr. med. Karl Heinz Rahn
Director of the Medical University Policlinic, University of Münster



*1937

1956–1962 Medical School at the Universities of Mainz and Düsseldorf (Germany)
1962 Dr. med. at the University of Mainz

Training

1962–1963 Rotating Internship in Bochum, Herne and Mainz
1963–1965 Training in Experimental Pharmacology in the Department of Pharmacology, University of Mainz Medical School
1965–1971 Training in Internal Medicine and in Clinical Pharmacology in the Department of Medicine, University of Mainz Medical School and in the Department of Medicine, Emory University Medical School, Atlanta (USA)
1971 Associate Professor of Internal Medicine and Clinical Pharmacology at the University of Mainz Medical School.

Academic Positions

1972–1976 Associate Professor of Medicine at the Medical School of the University of Aachen (Germany)
1976–1987 Full Professor and Head of the Division of Hypertension, Nephrology and Clinical Pharmacology, Department of Medicine, University of Maastricht Medical School in Maastricht (The Netherlands)
1987–2003 Professor of Medicine and Chairman of the Department of Medicine D, Medical School of the University of Münster (Germany)
Since 2003 Professor Emeritus of the University of Münster Medical School.
1994–2004 Medical Director and Chairman of the Board of Management of the University Hospital Münster.

Activities in Scientific Societies

1991–1995 President of the German Society of Hypertension
1998–2000 President of the International Society of Hypertension
1999–2000 President of the German Society of Internal Medicine
2000–2001 President of the German Society of Nephrology.

Awards and Honorary Memberships

1969	Paul Martini Award for Research in Clinical Pharmacology (German Society for Medical Statistics)
1976	Award of the Regensburg College for Postgraduate Medical Education
1996	Franz Gross Award for Research in Hypertension (German Society of Hypertension)
1998	Honorary Member of the Polish Society of Hypertension
1999	Honorary Member of the American College of Physicians
2003	Honorary Member of the German Society of Internal Medicine
2004	Distinguished Member Award of the International Society of Hypertension
2007	Life Achievement Award of the European Society of Hypertension

Curriculum Vitae

Professor Dr. med. Dr. h.c. Wolfgang Rascher
Director of the Children and Youth Hospital, University of Erlangen

*1950



Beruflicher Werdegang:

1970–1976	Studium der Humanmedizin an der Universität zu Köln und Heidelberg
1976	Promotion am Klinischen Institut für Herzinfarktforschung, Medizinische Klinik Heidelberg (bei Professor H. Greten)
1977–1981	Wissenschaftlicher Assistent am Pharmakologischen Institut der Universität Heidelberg (bei Professor F. Gross)
1982–1987	Wissenschaftlicher Assistent an der Universitäts-Kinderklinik Heidelberg (bei Professor H. Bickel)
1982	Habilitation in Experimenteller Pharmakologie
1987	Facharzt für Kinderheilkunde, Umhabilitation für das Fach Kinderheilkunde – Klinische Pharmakologie
1987–1993	Professor (C2) für Kinderheilkunde und leitender Oberarzt, Abteilung Kinderneurologie, Universitäts-Gesamt-Hochschule – Essen (bei Professor H. Olbing)
1993–1998	Professor (C4) für Kinderheilkunde, Direktor der Abteilung für Allgemeine Pädiatrie und Neonatologie der Justus-Liebig-Universität Gießen
Seit 1998	Professor (C4) für Kinderheilkunde, Direktor der Kinder- und Jugendklinik, Universitätsklinikum Erlangen, Friedrich-Alexander-Universität Erlangen- Nürnberg
2004	Ehrendoktor der Universität Pécs, Ungarn

Preise:

1987	Adalbert-Czerny-Preis der Deutschen Gesellschaft für Kinder- und Jugendmedizin
1995	Franz-Gross-Wissenschaftspreis der Deutschen Hypertonie-Gesellschaft

Ausgewählte Aufgaben und Funktionen:

Seit 1993	Mitglied der Kommission Arzneimittelsicherheit der Deutschen Gesellschaft für Kinderheilkunde und Jugendmedizin
Seit 1994	Mitglied der Kommission A des Bundesinstituts für Arzneimittel und Medizinprodukte (BfArM)
2002–2004	Stellvertretender Vorsitzender des Expertengremiums Arzneimittel im Kindes- und Jugendalter am BfArM
Seit 2002	Vorsitzender des Klinischen Ethikkomitees am Universitätsklinikum Erlangen

Seit 2003	Mitglied der Ethikkommission der Bayerischen Landesärztekammer (Pädiatrischer Konsiliarium)
2003–2007	Mitglied des Paediatric Expert Group (PEG) der European Medicines Agency (EMA)
Seit 2006	Vorsitzender der Kommission Arzneimittel für Kinder und Jugendliche am BfArM

Schwerpunkte:

Klinisch:

- Kinder-Nephrologie
- Neonatologie
- pädiatrische klinische Pharmakologie
- Pharmakovigilanz

Wissenschaftlich:

- Regulation von Blutdruck sowie Salz- und Wasserhaushalt
- Hypertonie bei Kindern
- vasoaktive Peptide
- Pharmakovigilanz
- fetale Programmierung

Statistics Hypertension Berlin 2008

The participants come from 98 different countries. The top ten countries are:

	Amount	%
Germany	758	11,6
France	633	9,7
Spain	608	9,3
Italy	467	7,1
Japan	385	5,9
Greece	354	5,4
Turkey	217	3,3
UK	191	2,9
Portugal	153	2,3
Thailand	152	2,3

Session Types	Amount
Breakfast Topical Workshop	12
Educational Track Session	7
Industry Symposium	17
Meeting	23
Oral Session	34
Other Scientific Session	8
Plenary Session	3
Poster Session	39
Social Event	4
Society Event	7
Symposium	12
Teaching Seminar	3
Working Group	10
Total	179

Session Positions	Amount
Chairmen	266
Speaker/Presenter	878
Invited Speaker Lectures	107
Presentations (inc. BP)	771

Abstracts	Amount
Standard Abstracts (submitted)	2539
Late Breaker Abstracts (submitted)	97
Oral Presentations	357
Poster Presentations	2270
Rejections	9

Top 10 Countries Faculty	Amount	%
Germany	65	23,4
United States	28	10,1
United Kingdom	24	8,6
Italy	20	7,2
Japan	20	7,2
France	15	5,4
Australia	13	4,7
Netherlands	10	3,6
Poland	9	3,2
Sweden	9	3,2
Total No. of Countries	32	
Total No. of Faculty	279	

Order Form for Photographs of the Speakers

**Opening Press Conference
during HYPERTENSION Berlin 2008**

Date: 16th June 2008, 12:30 to 13:30 p.m.

Place: ICC Berlin, room 43

Please provide me the following photo(s) via email:

- Professor Dr. med. Detlev Ganten
- Professor Dr. med. Thomas Unger
- Professor Dr. med. Martin Paul
- Professor Dr. med. Karl Heinz Rahn
- Professor Dr. med. Dr. h. c. Wolfgang Rascher

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