

April 19, 2004

2004 Paul Martini Prize awarded for clinical-therapeutic pharmaceutical research
Sildenafil against pulmonary hypertension: Potential beyond sexual potency

Wiesbaden, April 19, 2004 (PMS). As body parts, the lungs and the penis couldn't be more different. Nevertheless, due to the surprising biochemical connection of both organs and the research of resourceful physicians, patients suffering from pulmonary hypertension will be able to benefit in the future from a medical innovation that was originally designed for erectile dysfunction: sildenafil tablets. Today, internist Dr. med. Hossein Ardeshir Ghofrani, senior physician at the University Clinic of Gießen, was honored with the Paul Martini Prize for his ground-breaking studies with this potent active ingredient in a new application. The prize worth EUR 25,000 is awarded every year for outstanding achievements in clinical-therapeutic pharmaceutical research. The award celebration takes place during the annual meeting of the German Society for Internal Medicine (DGIM) in Wiesbaden.

In his congratulatory remarks, the Munich-based internist Professor Dr. Dr. h.c. Peter Scriba praised the excellent quality of the four clinical studies submitted whose therapeutic approach is now also being investigated in a large study initiated by the manufacturer of sildenafil with the objective of obtaining marketing authorisation soon.

Pulmonary hypertension

Chronic pulmonary hypertension leads to considerable performance restrictions and can be life-threatening in severe cases. Due to constricted blood vessels in the lungs, the patient's heart has difficulties in pumping blood through the lungs. This could be caused by blood clots or changes in the lung tissue, combined with a shortage of oxygen in the tissue as it occurs in pulmonary fibrosis or chronic obstructive pulmonary disease (COPD). However, there are also other forms of pulmonary hypertension the causes of which can not be sufficiently explained as of yet. While pharmaceuticals for the treatment of pulmonary hypertension are already available, they sometimes cause undesirable side effects, since they do not specifically act within the lung tissue. Furthermore, it is not yet possible to cure the disease or fully overcome the disease-related restraints of a patient's physical capacity. In their four award-winning studies, Ghofrani and his team at the University Clinic of Gießen were able to demonstrate that sildenafil tablets – especially when administered in combination with another vasodilating drug that is inhaled – not only lower pulmonary hypertension but also improve oxygen absorption, an effect not always provided by previous forms of therapy. This enhances the patients' physical capacity and quality of life. The effectiveness of this therapeutic approach was examined not only in patient studies but recently also with healthy test subjects, who were exposed to experimental pulmonary hypertension in the low-oxygen conditions during an ascent of Mount Everest.

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The background between the new therapeutic approach is the biochemical connection between the penis and the lungs: The enzyme phosphodiesterase 5 is found in both organs – almost exclusively in these organs. In the penis, it can weaken an erection, while it can contribute to the constriction of blood vessels in the lungs. Sildenafil inhibits this enzyme in a targeted manner, thereby helping patients with erectile dysfunction to have stable erections and – according to the studies from Gießen – helping patients suffering from pulmonary hypertension to achieve good blood circulation in the lungs.

The efficacy and safety of this therapeutic approach is currently being tested by the manufacturer in a clinical study with the objective of obtaining marketing authorisation for the drug in its new application.

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The award winner

From 1986 to 1994, Dr. med. Hossein Ardeshir Ghofrani, 36, studied chemistry in Aachen and human medicine in Gießen. He obtained his special medical training as an internist at the University Clinic of Gießen. Currently, he works as a senior physician at the University of Gießen Lung Center (UGLC), managed by Professor Seeger (Medical Clinic II) and Professor Grimminger (Medical Clinic V), and is responsible for the divisions of pulmonary hypertension and intensive internal medicine as well as the right heart catheter laboratory.

Since 1997, Ghofrani has served as project manager for the priority program of "Molecular Differentiation Mechanisms of Epithelia," which is funded by the German Research Foundation (DFG), and has been managing a partial project in Special Research Area 547 "Cardiopulmonary Vascular System" since 2003. During the past few years, he developed new treatment concepts for patients with various disorders of the lung blood vessels (pulmonary hypertension, chronic obstructive pulmonary disease (smoker's cough), pulmonary fibrosis, etc.).

In 2002, Dr. Ghofrani was the recipient of the travel award of the American Thoracic Society and the Francois Brenot Prize of the European Respiratory Society. In 2004, he also received the research award of the René Baumgart Foundation (established by the Self-help Organization for Pulmonary Hypertension, based in Rheinstetten).

The Paul Martini Foundation

The non-profit Paul Martini Foundation, Berlin, supports the advancement of pharmaceutical research as well as the research of drug therapy and works to expand the scientific dialog about pharmaceutical research and development between medical scientists at universities, hospitals, the research-based pharmaceutical industry, other research institutions and government agencies.

The foundation was established in 1966 by the seven German pharmaceutical companies that were organized in Medizinisch-Pharmazeutische Studiengesellschaft (Society for Medical and Pharmaceutical Studies). In 1994, the Berlin-based German Association of Research-based Pharmaceutical Companies (VFA) with its 44 member companies assumed sponsorship of the foundation.

The foundation was named after the outstanding scientist and physician from Bonn, Professor Paul Martini, in honor of his special achievements and

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service with regard to the advancement and continued development of clinical-therapeutic research, which he impacted significantly for decades with his "Methods of Therapeutic Examination" published in 1932. The prize awarded annually by the foundation for outstanding clinical research is also named in his honor.

The press release can be downloaded at www.paul-martini-stiftung.de.

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