

PROCEEDINGS

of the **Noninvasive Methods in Cardiology**
Symposium held as a part of the MEFA Congress
Progress in Medicine and Pharmacy
Brno, November 4 to 7, 1998
PART I.

Noninvasive Methods in Cardiology A symposium held in Brno, November 4 to 7, 1998

This symposium, organised by the Department of Functional Diagnostics and Rehabilitation (Head, *Prof. Jarmila Siegelová*) and the Department of Physiology (Head, *Prof. Bohumil Fišer*), was traditionally focused on the exchange of ideas amongst Czech and foreign scientists, particularly collaborating medical science groups from Graz, Paris, Minnesota and Brno. By the efforts of the Brno organisers, science and technology have always been in the foreground of the MEFA trade fairs and congresses held in Brno so far. This is because the first step in the development of new biomedical technologies is to test their qualities in a physiological laboratory. Almost all devices used in the present-day medicine, from the simple to the most sophisticated ones, e.g., from the mercury manometer for blood pressure measurement to the implantable cardioverter-defibrillator, served in the past as methodical tools in basic research. Many of the methods presented at this symposium will undoubtedly find their application in clinical medicine in the future and some ideas may be challenging to manufacturers as well as engineers. This was particularly true for the contribution on the optimal use of energy for blood circulation delivered by *Professor Thomas Kenner* of the Medical Faculty, Karl Frances University Graz, Austria, and the paper on the circadian variability of temperature in fasting subjects presented by *Professor Jean-Paul Martinaud* of the Medical Faculty, Hospital Lariboisiere, Paris, France.

The series of studies on chronobiology from the Halberg Chronobiological Center in Minnesota (USA) demonstrated the need for a change in the philosophy of biomedical technology. *Prof. Franz Halberg*, together with his colleagues *Germaine Cornélissen* and *Yoshihiko Watanabe*, presented a very important lecture entitled From time-unspecified measurements to chronobiological specialties, such as chronomedicine and chronoastrobiology: challenges for manufacturing. He concluded that the past half-century had provided designs which served first for self-measurements, then desk computations and eventually automatic methods.

In biotelemetry for humans, increasingly sophisticated pacemakers, cardioverters and defibrillators as well as drug pumps on the therapeutic side are available. The recently developed diagnostic devices include implanted heart rate monitors and haemodynamic analysers that, in addition to heart rate, also record blood pressure. The priority tasks are, first, to improve diagnostic devices to the point where they can detect the earliest signs of a developing disease before it becomes manifested; second, to render therapeutic devices capable of providing preventive treatment and, third, to connect these two categories of devices so that preventive treatment might become automatic or, at least, self-implementable by the subject concerned.

The papers delivered by scientists and academics from the Faculty of Medicine, Masaryk University, Brno, were concerned with the pathogenesis of hypertension and ischemic heart disease, the areas where the diagnosis and treatment are dependent on sophisticated biomedical devices now and will be dependent even more in the future.

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