

HEART FRIENDS AROUND THE WORLD
"ACADEMY CARDIOLOGY" FOUNDATION

CARDIOLOGY UPDATE 2006

September 21-24, 2006, "Albena" Resort, Bulgaria

Under the patronage of the President of Republic of Bulgaria
Mr. George Parvanov

ABSTRACT BOOK



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ABSTRACT BOOK

SCIENTIFIC PROGRAM

SEPTEMBER 21, THURSDAY

17.00 - 17.30

OFFICIAL OPENING CEREMONY

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Executive director of Heart friends around the world

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Department of Medicine, ¹College of Medicine, University of Lagos, Idiaraba, Lagos, Nigeria

²Lagos University Teaching Hospital, Idiaraba, Lagos, Nigeria

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Bielefeld Klinikum, Dept. of cardiology and internal intensive care, Bielefeld, Germany

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A. Doganov

National heart hospital, Sofia, Bulgaria

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Italy

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U.O. Cardiologia Cecina Hospital, Italy

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State center for preventive medicine, Moscow, Russian Federation

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Center of preventive cardiology of the 2nd Medical department, University hospital, Pilsen, Czech Republic

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Cardiovascular Medicine, National Heart and Lung Institute, Imperial College London, UK

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Department of chemistry and biochemistry, Medical university of Sofia, Bulgaria

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N. Gotcheva

Clinic of cardiology, National heart hospital, Sofia, Bulgaria

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Clinic of endocrinology, Medical university, Sofia, Bulgaria

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D. Popova

University Hospital "Queen Giovanna", Clinic of metabolic diseases and dietetics, Medical university, Sofia, Bulgaria

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V. Yotova

National heart hospital, Sofia, Bulgaria

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N. Gotcheva, B. Georgiev, V. Baytcheva, ¹V. Christov, ¹Z. Kamenov

Dept of cardiology, National heart hospital, Sofia, Bulgaria

¹Clinic of endocrinology, Alexandrovska University hospital, Sofia, Bulgaria

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C. Gomes, M. Rodrigues, J. Lopes, A. Rui Leal, L. Gomes

Cardiovascular prevention and rehabilitation unit, Hospital Sto António, Porto, Portugal

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A. Rui Leal, M. Rodrigues, J. Amado, L. Gomes

Medical Students of ICBAS. "Cardiovascular prevention and rehabilitation unit",

Hosp Sto António and Instituto ciencias biomédicas Abel Salazar (ICBAS), Porto, Portugal

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I. Bernatova, A. Puzserova

Institute of Normal and Pathological Physiology Slovak Academy of Sciences,

Bratislava, Slovak Republic

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¹A. Puzserova, ¹J. Kopincova, ^{1,2}Z. Csizmadiova, ³R. Andriantsitohaina, ¹I. Bernatova

¹Institute of normal and pathological physiology, Slovak academy of sciences

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Comenius University, Bratislava, Slovak Republic.

³Biologie Neuro-Vasculaire Intégrée, UMR INSERM 771-CNRS 6214, School of Medicine,

Angers, France

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N. Gotcheva, B. Georgiev, V. Baytcheva,

Dept of cardiology, National heart hospital, Sofia, Bulgaria

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B. Georgiev, N. Gotcheva, I. Ivanov

Dept of cardiology, National heart hospital, Sofia, Bulgaria

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Cardiovascular changes during breathhold diving in humans*C. Marabotti**U.O. Cardiologia, Cecina Hospital, Italy*

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LECTURE ABSTRACTS

L-01

HEART FRIENDS AROUND THE WORLD (HFATW) FROM GENESIS TO REVELATION

F. Burgarella*Executive director of Heart Friends Around The World*

Heart Friends Around The World was born in 1994 in Bergamo, a town in North Italy, during a meeting of the European Association of Cardiovascular Rehabilitation. I was then part of its Board of Directors and in charge of Public Relations. Cardiologists from 20 countries took part in the meeting and in the birth of the organization. Some months later we were present with our own booth at the World Congress of Cardiology in Berlin, Germany. We had a great success: more than 400 cardiologists followed the event and we established contacts with a great number of chiefs of Cardiological Departments in Hospitals and Universities, distinguished leaders in the field of Cardiology all over the world.

The target of the Association was the promotion of the Prevention and Rehabilitation of Heart Disease with particular emphasis in developing countries. Our role in the international scenario grew quickly and in a short time we were well-known, we became affiliated members of the International Federation of Cardiology, established a good relationship with the World Health Organization.

In association with WHO, we have organized a free-of-charge scholarship, initially in Germany, at present in Italy, where doctors are given the opportunity to participate in programs of Cardiology Prevention and Rehabilitation. People from different countries, among them also a young Bulgarian Cardiologist, have participated in the school. For years we published a six-monthly review and we mailed it to hundreds of cardiologists in more than one hundred countries around the world in all the five continents. We regularly organize an international meeting, called Cardiology Update, which takes place in a different country every year, in West or East Europe and in South America. And this year the Cardiology Update 2006 is in Bulgaria.

We have also organized a World Affiliated Chapter in different countries; we have now Groups of Heart Friends in India, Iran, the Slovak Republic, Cuba, Venezuela and other Andean Countries in South America. We participate in the World Heart Day with original programs for the Prevention of Cardiovascular Disease, for example the "Healthy Farms Project", that is farms where healthy foods are produced and where local doctors are involved to educate people about the control of coronary risks factors.

We have published a number of booklets and educational books for laymen and thousands of copies have been distributed to the healthy population for the control of cholesterol in the diet with dedicated recipes, the promotion of physical activity and the control of high blood pressure. We have also published a tale to fight rheumatic fever in the developing world.

Thanks to the scientific results of all these activities I have been assigned the role of peer reviewer of the WHO guidelines for the Prevention of cardiovascular disease and stroke in 2006.

I hope to find new friends and new ideas in Bulgaria to set up local and international projects of friendship to fight cardiovascular disease all the time and everywhere.

We consider this meeting a very important step forward in our global work.

L-02

NATIONWIDE, NON-GOVERNMENTAL EDUCATIONAL PROGRAM ON PREVENTIVE CARDIOLOGY

A. Bellosillo

Makati Medical Center, Makati City, Metro Manila, Philippines

At no time in the history of medicine and coronary artery disease prevention has been recognized, emphasized and highlighted as in the early seventies, when the World Heart Organization issued the following statement: "Coronary heart disease has reached enormous proportion, striking more and more at younger subjects. It will result in the coming years in the greatest epidemic mankind has faced unless we are able to reverse the trend by concentrated research into its cause and prevention.

While in the well developed countries, there has been a decline in the incidence of cardiovascular deaths, only a small part of the decrease is due to the development of new forms of medical and surgical interventions. A much more important reason is the changes in life style involving a reduction in the major and minor risk factors of atherosclerosis, an approach best achieved through the practice of Preventive Cardiology.

The key to a successful prevention program is education of the public on matters pertaining to the heart. However, despite the obvious benefits, there is little or no priority given within the health care system in many countries to formalized and organized public education. While institutions, agencies and organizations (both governmental and private) may well have education as one of their sworn functions, they often default for logistical reasons, time constraints, inadequate personnel trained for that purpose, etc.

The Foundation for Lay Education on Heart Diseases, Inc. a non-governmental, non-stock, non-profit organization was launched on February 22, 2000 in the Philippines to address that neglect of that there is a important aspect in the management of cardiovascular diseases, i. e., education. In the span of 6 years and 4 months, the Foundation has conducted 175 public forums, 15 health workers workshops, 6 senior citizen seminars, 6 national annual conventions and 5 regional assemblies – all on Preventive Cardiology. Helping the Foundation to reach out to all the nooks and corners of the country are 10 chapters. Soon, the health care professionals in government service (municipal and city health officers and their nurse, nutritionists and midwives) as well as the care workers will be given attention, too.

L-03

CARDIOVASCULAR PREVENTION FOR LATIN AMERICA

M. Andrade Ruiz

Universidad De Los Andes, Merida, Venezuela

The programs of prevention in cardiovascular disease have managed neither in the industrialized countries to even stop the prevalence of this disease neither the morbimortality, staying like first cause of mortality in the world. It hopes that this increases to a 100% according to the projections in the 2020, staying the factors of cardiovascular risk like smoking, diabetes, dyslipidaemia, HTA and metabolic syndrome as but important in the development of this disease a new model of prevention based on the formation of medicine students in cardiovascular prevention therefore considers and that these are multiplying beings in the communities specially in the university community.

For such aim design a clinical study epidemiologist to determine the cardiovascular risk of the university population in the different faculties and work groups (Personal educational, employees, workers and students). When obtaining the diagnose was developed a multidisciplinary program and of conception in primary attention, for the prevention of cardiovascular risks directed to the university population, initiating the harvesting by the medicine faculty like group pilot and soon extending to all the faculties.

This program has a reach greater than it involves not only students of the science of the health if not that in addition tried to stimulate to the rest of the student population so that it participates according to his area of work to develop plans of cardiovascular prevention, for example the accomplishment of publicity on the part of the school of graphic design, educative formats by the education school, plays by the school of art among others.

This project has as aim fundamental to involve to all the university community in the fight and prevention of the cardiovascular disease, and through the Latin American network of medicine students for diffuse in all the universities of Latin America.

L-05

CARDIAC REHABILITATION AND PREVENTION IN AFRICA

J. Ajuluchukwu*Department of Medicine*¹ *College of Medicine, University of Lagos, Idiaraba, Lagos, Nigeria*² *Lagos University Teaching Hospital, Idiaraba, Lagos, Nigeria*³ *Member Scientific Committee of the Heart friends around the world*

Evidence based methods have demonstrated that cardiac rehabilitation is useful for the primary and secondary prevention of cardiovascular disease (CVD), especially for coronary heart disease. Cardiac rehabilitation as performed in the industrialised nations is expensive, though cost effective. Comprehensive cardiac rehabilitation program is very scanty in Africa and at best rudimentary. Limited availability and poor utilization of this mode of medical management are multifactorial, and includes paucity of data, regarding prevalence of CVDs, risk factors, research on efficacy of methods, and cost effectiveness in Africa, and acceptance by patients and health professionals. The healthcare professionals, the policy makers and the populace may still perceive CVDs as rare, and non -urgent problems in the face of acute and chronic infections. This communication examines the efforts or achievements made in rehabilitation and preventive measures, including barriers to preventive practices, attempts to identify the positive and negative impact of certain cultural practices and the possibility of an African type cardiac rehabilitation program, using culturally acceptable activities, such as traditional dance steps and music.

L-07

EUROACTION: A EUROPEAN SOCIETY OF CARDIOLOGY DEMONSTRATION PROJECT IN PREVENTIVE CARDIOLOGY

K. Kotseva*Cardiovascular medicine, National heart and lung institute, Imperial college, London, UK*

EUROACTION is a European Society of Cardiology demonstration project in preventive cardiology which aims to raise standards of preventive cardiology care in hospital and general practice. It was conceived following the results of the EUROASPIRE II survey which found that many patients with coronary disease, and their families, were not achieving the lifestyle, risk factor and therapeutic targets defined in the Joint European Societies Guidelines on cardiovascular disease (CVD) prevention. The project drew on the expertise of members of the former ESC Working Groups which are now joined as the new European Association of Cardiovascular Prevention and Rehabilitation, together with the Working Group on Cardiovascular Nursing and the European Heart Network.

EUROACTION was launched in 2003 in 8 European countries (Denmark, France, Italy, Poland, Spain, Sweden, the Netherlands and the UK) as a cluster randomised controlled trial in 24 centres: 12 general hospitals and 12 general practices. It is evaluating a nurse-led multidisciplinary ambulatory cardiovascular prevention and rehabilitation hospital programme for coronary patients and their families, and a nurse-led cardiovascular prevention programme for people at a high risk of developing cardiovascular disease (HEARTSCORE $\geq 5\%$ over 10 years; hypertension/dyslipidaemia; or diabetes mellitus) and their partners in primary care. The study involves about 10,000 coronary patients, high risk individuals and other family members.

The professional challenge for the EUROACTION project is the practical translation of the strong scientific evidence base for cardiovascular prevention and rehabilitation into effective patient care in every day clinical practice. The EUROACTION programme in both hospitals and general practice is based on several important principles. First, it addresses the complete spectrum of preventive cardiology care from patients who have coronary by-pass surgery through to asymptomatic people who are at high risk of developing atherosclerotic disease. Second, the programme offers equitable access to preventive cardiology care for patients and their families in their own localities because it was set up in busy general hospitals and general practices, not academic or specialist rehabilitation centres. Third, the programme is family centred. The partners of the patients and other relatives living in the same household are recruited to the programme. For patients with premature coronary disease the programme also reaches out to all first degree relatives, namely siblings and offspring. The whole family are helped in their efforts to adopt a healthier lifestyle: by not smoking, eating a cardio-protective diet and being physically active. Fourth, the programmes are nurse-led and multidisciplinary, involving dietitians and physiotherapists, working together with other health professionals, cardiologists and general practitioners. They use a one to one and group approach to help families adopt healthier lifestyle habits and also achieve the targets for blood pressure, cholesterol, glucose and the use of cardio-protective medications. Fifth, the programmes do not require specialised facilities. All programmes in both hospital and primary

care were set up in existing accommodation. The exercise programme was intentionally designed around simple equipment – step blocks, light weights, resistance bands – so it could be easily replicated in the home environment. Sixth, in primary care the programme addresses total cardiovascular disease risk, not single risk factors in isolation. The traditional medical silos of “hypertension”, “hyperlipidaemia” and “diabetes” are replaced by a comprehensive approach targeting those who are at high total (multi-factorial) risk of developing CVD. In EUROACTION, the Joint European Societies CVD Risk Charts, derived from the SCORE project, are used to identify such high risk individuals.

EUROACTION has stepped up to the professional challenge of translating scientific evidence into effective preventive care for all high risk patients in every day clinical practice. The principles of patient inclusiveness, equity of access, nurse-led multidisciplinary family based lifestyle intervention and total cardiovascular risk assessment and management are all central to this programme. As this innovative model of care is being evaluated in the context of a cluster randomised controlled trial it will be possible to quantify what it achieves compared to usual care and at what cost.

L-08

INSULIN RESISTANCE IN CHRONIC DISEASE. UNITY IS STRENGTH FOR PREVENTION? THE OPINION OF THE CARDIOLOGIST

A. Scalzini

Cardiac rehabilitation center of Cecina Hospital, Italy

The Metabolic Syndrome is a simple way to identify people at high cardiovascular risk in primary prevention. The NCEP ATP III criteria are the most usual criteria adopted in literature. The WHO, American Association of Clinical Endocrinology, European group of the Study of Insulin Resistance criteria are more complete and they explain the concept of MetS that consist of abdominal obesity and insulin resistance, but they are difficult to apply in a great number of people through the generalist management. The most important one is the role of abdominal obesity and the lower adiponectine levels with the increase of leptine, the pro-inflammatory factors and pro-atherogenetics factors, the role of insulin resistance in those phenomena with the lost of the normal role of insulin on carbohydrates, lipids, proteins and purines control and the lost of the effect of insulin in endothelial and vascular protection (novel effects of insulin). Many studies demonstrate the high risk in mortality and the increase of cardiac events of MetS (rewiw of WOSCOP, WISE, WHS), and they also demonstrates that the increase of CPR levels in MetS are correlate to the hight risk of cardiovascular events, also if CPR level has not the specific target of cardiovascular disease. There are many study in progress of the demonstration that it's possible to identify other atherogenetic specific markers in MetS and how they are transformed with changes of the diet, physical activity and behaviour aspect of life. A very interesting development of primary prevention not only for cardiovascular disease is demonstrated in several studies the role of insulin resistance in the genesis of chronic disease as breast cancer, pancreatic cancer, ovaric cancer and many other disease. For those elements in common several specialties of the medicine, with the respective associations, could unite the strengths to get more encouraging results in the primary prevention.

L-09

INSULIN RESISTANCE IN CHRONIC DISEASES: OPINION OF THE ENDOCRINOLOGIST

V. Christov

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The inability of insulin to mediate glucose utilization, called insulin resistance is a common finding in our conditions of obesity epidemics. Several methods for determination of insulin resistance exist: insulin clamp-techniques, minimal models, oral glucose tolerance test with insulin sampling, HOMA etc. Although some of them are time-consuming and expensive, there is still no universal consensus on standardization, cutoff points and interpretation of these tests. Insulin resistance is the basic feature of the metabolic syndrome. Recently this entity has been critically discussed in the literature. The most important practical advise is that this disease-constellation must be sought and treated in concert. Many studies have shown, that late “diabetic” complications start in the pre-diabetic state. An early and aggressive therapeutic approach with life-style modification and if necessary weight-reducing drugs, combined in most cases of proven insulin resistance with metformin or glitazones is the way for decreasing weight and prevention of type 2 diabetes.

L-10

INSULIN RESISTANCE IN CHRONIC KIDNEY DISEASE. THE OPINION OF THE NEPHROLOGIST

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CKD as a cause of IR

The kidney plays an important role on glucose homeostasis. Diminished insulin-stimulated glucose uptake has been documented in advanced CKD using the euglycemic clamp technique. Insulin resistance in CKD is characterized by the presence of hyperinsulinemia, glucose intolerance and complex derangements of insulin secretion. Several explanations for the presence of IR in CKD have been proposed, such as deficiency of vitamin D, anemia, sympathetic nervous system dysfunction or putative uremic toxins. Recent clinical studies suggest that IR is present already in patients with mild renal dysfunction or even with apparently normal renal function. Thus, kidney disease per se seems to cause a syndrome of IR

IR as a cause of CKD

The prevalence of CKD is increasing alarmingly mainly as a result of an ongoing epidemic of obesity, metabolic syndrome and diabetes mellitus.

Metabolic syndrome (MS), also known as the IR syndrome, increases the risk for DM, hypertension, cardiovascular (CV) disease and CV mortality. Recently, epidemiologic studies have also linked the MS with an increased risk for microalbuminuria, an early marker of kidney injury; and with a higher prevalence of CKD. These studies have found that among individuals with normal or near-normal kidney function at baseline, the presence of MS would be associated with an increased risk (from 2 to 3-fold) of developing CKD over time, independently of diabetes and hypertension.

The mechanisms of diabetic injury leading to CKD have been well described. Less is known about the mechanisms responsible for the relationship between MS and CKD in non diabetic individuals. Nonetheless, it is well documented that each component of the MS may be implicated in the development or progression of CKD. Obesity and dyslipidaemia, for example, may be responsible for the development and progression of CKD and the reduction of body weight and use of statins slow CKD progression.

In conclusion IR is both a cause and a consequence of CKD and is associated with an increased risk of CV morbidity and mortality and a faster CKD progression. It is compelling to promote lifestyle and pharmacological treatment to prevent MS and its clinical consequences. Given the prevalence of patients with metabolic syndrome but without diabetes, we need to more effectively identify and treat individuals at risk for CV and CKD.

L-11

THE ROLE OF NUTRITION AND EXERCISE IN THE PREVENTION AND MANAGEMENT OF CARDIOVASCULAR DISEASE

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Cardiovascular disease, obesity, and type2 diabetes are rapidly increasing worldwide (WHO, 2003). From a public health perspective, the concern is not only about the accelerating rate of changes in the pattern of these diseases, but also the way they have started to appear earlier in life. Furthermore, the shift seems to be much greater in countries of economic transition. In addition, with the change in the population profile and the increased number of elderly the burden of cardiovascular disease and diabetes would be much greater in the years to come. Hence experts advocate the importance of applying a life course approach to the prevention and control of these diseases (WHO & FAO, 2003, and Popkin, 2002). Nutrition and physical activity are considered as well established major markers for prevention and management of cardiovascular disease, obesity and type 2 diabetes.

This paper begins by presenting an overview of the emerging evidence such as inflammation, clotting, oxidative stress, the metabolic syndrome and the experiences of early life in the aetiology of cardiovascular disease. It will then move on to look at the important role of nutrition and physical activity in relation to these emerging risk factors.

While examining the role of nutrition in the aetiology, prevention, treatment, and management of cardiovascular disease, it focuses on macro and micro nutrients and the synergetic impacts of dietary fat, carbohydrates, antioxidants, flavonoids, lycopene, potassium, fibre, magnesium, selenium, folate, and organosulphur compounds of food on blood pressure, blood lipid, clotting, immune function, oestrogen metabolism and enzyme production.

In addition, it will look at the physiological and psychological aspects of exercise in prevention and management of obesity and metabolic syndrome.

Finally, using the current evidence this paper highlights the best current strategy for prevention & management of cardiovascular disease by examining the opportunities and challenges for implementing "population based" versus "high risk group" intervention programmes in relation to cardiovascular disease, obesity and type 2 diabetes.

References

- Popkin, Barry M. (2002). "An overview on the nutrition transition and its health implications: The Bellagio meeting." *Public Health Nutrition* 5(1A): 93-103.
- WHO & FAO (2003) Diet, Nutrition and the Prevention of Chronic Diseases WHO Technical Report Series 916, Geneva.

L-12

COST-EFFECTIVENESS IN CARDIAC REHABILITATION

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The author intends to discuss/present the cost-effectiveness of cardiac rehabilitation programs (CRP), in their several forms, in order to increase their use and reimbursements. Based on recent publications and some studies from the CR Unity of Hosp Sto António – Porto, we pretend to develop the following topics:

1 – Basic concepts and important ideas on Economic Evaluation of Health services, namely Direct and Indirect Costs, Quality of Life, QALYs, Cost-Effectiveness, Cost-Benefit, Cost-Utility (Oldridge, Furlong et al. 1993; Drummond and al 1997; Oldridge 1998; Mark and Hlatky 2002);

2- Major results and conclusions of a very recent review on economics of Cardiac Rehabilitation (Papadakis, Oldridge et al. 2006);

3 – Analysis of some important articles concerning the use of different types of CR programs and their practical implications (Collins, Scuffhan et al. 2001; Georgiou D 2001; Southard, Southard et al. 2003; Beswick AD and Taylor RS 2004; Hambrecht R and Kluge R 2004; Jolly K 2006);

4 – Some reflections about two partial studies performed in Porto- Portugal: one about cost analysis of a "Course for Spouses" and another about the Cost-Effectiveness of a "Course for Patients with IHD" (Leal, Paiva et al. 2004).

As main conclusions CR seems to be moderately cost-effective. The range of cost per life year gained is estimated from 2.193 dollars to 28,193 dollars and from - 668 dollars to 16,118 dollars per QALY, but more trials are justified to support the cost-effectiveness of cardiac rehabilitation. The literature evaluating home-based and alternative delivery models of cardiac rehabilitation is still insufficient to draw major conclusions, but internet-based case or course management systems could be used for patients with CVD, independently or in conjunction with CR. The general quality of published economic evaluations of CR is poor and further well-designed studies, with bigger samples, are necessary.

References

- Beswick AD, R. K., Griebisch I, Taylor FC, Burke M, West RR, Victory J, Brown J, and E. S. Taylor RS (2004). "Provision, uptake and cost of cardiac rehabilitation programmes: improving services to under-represented groups." *Health Technol Assess* 8(41):iii-iv, ix-x: 1-152.
- Collins, L., P. Scuffhan, et al. (2001). "Cost-analysis of gym-based versus home-based cardiac rehabilitation programs." *Australian Health Review* 24(1): 51-61.
- Drummond, M. and e. al (1997). *Methods for the Economic Evaluation of Health Care Programs*. Oxford, Oxford University Press.
- Georgiou D. C. Y., Appadoo S, Belardinelli R, Greene R, Parides MK, Glied S. (2001). "Cost-effectiveness analysis of long-term moderate exercise training in chronic heart failure." *Am J Cardiol* 15(87(8)): 984-8.
- Hambrecht R, W. C., Mobius-Winkler S, Gielen S, Linke A, Conradi K, Erbs S, and K. K. Kluge R, Sabri O, Sick P, Schuler G. (2004). "Percutaneous coronary angioplasty compared with exercise training in patients with stable coronary artery disease: a randomized trial." *Circulation* 23(109(11)): 1371-8.
- Jolly K, T. R., Lip GY, Stevens A. (2006). "Home-based cardiac rehabilitation compared with centre-based rehabilitation and usual care: A systematic review and meta-analysis." *Int J Cardiol* 28(111(3)): 343-51.
- Leal, A. R., C. Paiva, et al. (2004). A course for coronary patients spouses: 28 months of follow-up (abst). VIII World Congress of Cardiac Rehabilitation and Secondary Prevention, Dublin - Ireland, *Eur J Cardiovasc Prevention Rehab*.
- Mark, D. and M. Hlatky (2002). "Medical Economics and the Assessment of Value in Cardiovascular Medicine:Part I." *Circulation* 103: 516-20.
- Oldridge, N. (1998). "Comprehensive cardiac rehabilitation:is it cost-effective?" *Eur Heart J* 19: 042-049.
- Oldridge, N., W. Furlong, et al. (1993). "Economic Evaluation of Cardiac Rehabilitation Soon After Acute Myocardial Infarction." *Am J Cardiol* 72: 154-161.
- Papadakis, S., N. Oldridge, et al. (2006). "Economic Evaluation of Cardiac Rehabilitation: a systematic review." *Eur J Cardiovasc Prev Rehabil* 12: 513-520.
- Southard, B. H., D. R. Southard, et al. (2003). "Clinical trial of an Internet-based case management system for secondary prevention of heart disease." *J Cardiopulm Rehabil* 23(5): 341-8.

L-13

IN-PATIENT CARDIAC REHABILITATION AFTER CARDIOSURGERY

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Cardiac rehabilitation programs are recognized as integral part of the comprehensive care of patients who have undergone cardiac surgery. If patients with coronary artery bypass graft are well-known candidates for cardiac rehabilitation services, nowadays the candidacy has been broadened to include patients after valvular heart surgery, surgical correction of congenital heart disease and heart transplantation.

Inpatient rehabilitation should begin right after cardiac surgery, aiming to: stabilize clinical status, prevent weakness and complications caused by prolonged bed rest, introduce concepts of risk factor reduction and healthy life style.

In-patient phase I cardiac rehabilitation programmes are now mostly limited to early mobilization, so that self care is possible at discharge, and brief counseling to explain the nature of the illness or intervention, to increase the patient's awareness of his/her risk factors and to reassure the patient about future progress and follow-up.

Every eligible patient should have access to an individualized program and, where possible, group education and discussions. If there are no contraindications for exercise, activity will be advanced according to each patient's tolerance and response. In this phase, physical activities include: range of motion exercises, diaphragmatic breathing, incentive spirometry exercises, ambulation in the room and hallway, and review of stair climbing prior to discharge. If it is necessary patients should receive heart monitoring, oxygen saturation monitoring as indicated and blood pressure evaluation prior and during each session. ECG monitoring is one of the most costly of the services provided in a cardiac rehabilitation unit.

Whether rehabilitation will be further conducted on an in-patient or out-patient basis should be determined by the availability of local facilities and the pattern of the patient's recovery. Some East-European countries have also in-patient rehabilitation programmes for phase II (for about 2-5 weeks) and long term follow-up (every 6 months), during phase III of cardiac rehabilitation - Romania faces the same situation, due to medical insurance system, which covers only the costs of institutional rehabilitation programmes. Inpatient cardiac rehabilitation provides some advantages: optimal pharmacological management, cardiac function monitoring, individualized exercise programs and personal education and support of patient and family.

In conclusion, hospital based cardiac rehabilitation must be comprehensive and should be individualized to meet the needs of each patient following cardiac surgery. It allows a gradually and safely increase of activity levels, provide information about the patient's disease and treatment, answer questions, address concerns and give the patient and family guidelines and instructions for going home.

L-14

REHABILITATION OF PATIENTS WITH CHRONIC CARDIAC INSUFFICIENCY.
WHAT CAN TELEMEDICINE CONTRIBUTE?**O. Brusis***Königsfeld, Germany*

Chronic cardiac insufficiency (CCI) is the only heart disease with increasing incidence. There are approximately 200.000 new cases every year in Germany alone. Rehospitalisation of these pts. is above the average frequent and the mean hospital stay of 18 days causes estimated annual hospital costs of 1,5 billion (1,5 x 10) euro.

From the patient's side deficient knowledge about the disease, poor compliance, and insufficient drug therapy, together with an inadequate and incomplete gathering and documentation of health-relevant physiological parameters contribute to that situation.

Improvement and abolishment of these deficiencies via telemonitoring and telecommunication has been shown to be possible.

Cardiac rehabilitation programs for pts. with CCI via individualised regular physical exercise improve significantly work capacity, VO_2 max, cardiac output, EF, functional capacity, among other parameters, and quality of life.

Important data such as heart rate, blood pressure, weight, O_2 -saturation, EKG, workload, body temperature, medication, and symptoms can be monitored daily. Accordingly treatment corrections and adjustments are easily carried out. Training sessions about nutrition, physical exercise, pharmacotherapy, and life-style round up the program.

Cardiac rehabilitation programs for CCI-pts. with telemonitoring led to a significant reduction of hospital admissions, physician-contacts, emergency room visits resulting in a considerable improvement of quality of life and in significant economic savings.

L-15

CARDIAC REHABILITATION AFTER PCI

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Percutaneous coronary intervention (PCI) has become a common treatment of ischemic heart disease. The number of procedures has overcome that of CABG; for the technical progress of the devices and pharmacological therapy, many patients (P) have been escaped from cardiac surgery.

Nevertheless the profile of risk of the patient after heart attack is elevated both for the cheap secondary prevention; both for the peculiarities of PCI that makes the P less susceptible to be rehabilitated.

Moreover the advantages of cardiac rehabilitation (CR) on the outcome after angioplasty are well known: reduces the re-PCI, the recurrent ischemia, the hospitalizations and cardiovascular mortality. It improves the life-style with reduction of the behaviours at risk; reduces depression and stress after heart attack with improvement of the psychological profile.

The exercise is able to increase the myocardial perfusion through an improvement of the endotelial function reducing the ischemia not only at level of the stenosis treated by PCI, but in the entire coronary vasculature. But CR is not only physical training: optimal pharmacological therapy, adequate psychological support and educational programs allow to reach the objective.

Here it comes the moment to widen the culture of prevention and of CR so that the benefits from this will be enjoyed by the greatest number of Ps worldwide and "at low cost".

The first thrilling, bright, rapid phase of "intervention" must be followed by the second calm, silent, but as effective phase of "prevention" as possible.

L-16

PROGRAM FOR OUT-PATIENTS CARDIAC REHABILITATION - DOBRICH

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Background. There are convincing evidences that the combination of regular exercises with interventions for life-style changes and modification of risk factors favour after the clinical course of cardiovascular diseases. With the shortening of the length of the hospital stay, the time spent in hospital is not adequate to give the skills required to monitor exercise activity and to adapt to lifestyle changes, necessary for the chronic conditions. There is a need for structured out-patient rehabilitation programs so that these programs can function as comprehensive prevention services.

Method. Between 2002 and 2006 the Dobrich Hospital included in a program for out-patients cardiac rehabilitation (CR) 98 patients aged 27-76 years. We used the CR model of the Swiss cardiac clinics.

The patients were with the following diagnoses:

- AMI
- Coronary revascularization
- Chronic stable angina
- Chronic heart failure

Initial evaluation:

- take medical history
- obtain ECG at rest and during stress test
- risk stratification (low, intermediate; high risk patient)
- measure risk factors

The use of bicycle ergometer has been the preferred form of exercise with sessions performed at moderate to high intensive (65 to 85 percent of the maximal measured HR) two times a week for 30 to 45 minutes per session. Interval, endurance and resistant training were also included. The duration of the program was 12 weeks.

The exercise is only one of the components of such a program. It was combined with education counseling strategies to assist the patient to achieve coronary risk reduction and to involve family members in order to change their lifestyle.

Result. Exercise tolerance increases by 30% at the check stress test.

- cessation of smoking
- weight reduction

For many of the patients the most prominent effects of CR fall within the psychological realm. Anxiety, depression, social isolation and patient-reported quality of life improve after rehabilitation. The group therapy gives better conditions for lifestyle changes.

Conclusion. Prevention through CR programs is recognized as an essential component of the contemporary management of patients with heart diseases. The trend is to move from the hospital to the out-patient conditions. The advantages are:

- close to the home atmosphere
- the family takes part in the lifestyle changes
- the duration is 3 months

Our experience with this CR model persuades us in the usefulness for the patients. CR will become the standard of care for out-patients with heart diseases.

L-17

THERAPY OF HOCM - CATHETER BASED TREATMENT

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Therapy of HOCM. The management of HOCM provides a wide spectrum including medical therapy (Verapamil, Beta-blockers, Disopyramide; Paroxetine in case of abnormal blood pressure response at exercise and antibiotics for endocarditis prophylaxis, primary and secondary preventive ICD implantation, surgery (septal myectomy), pace-maker implantation with continuous DDD pacing and the catheter based treatment by transcatheter alcohol ablation of septal hypertrophy (TASH).

The development of TASH. TASH is the first catheter based modality in the treatment of HOCM. The therapy was introduced by the German U. Sigwart in 1995 based on a concept which was communicated by our group in 1994 including the injection of absolute ethanol. The concept provides a transcatheter approach with balloon occlusion of the first septal branch of the left anterior descending coronary artery to induce ischemic subaortic septal hypokinesia with reduction of the intraventricular pressure gradient followed by the injection of ethanol injection to induce a permanent septal branch occlusion and hypokinesia in terms of a therapeutic myocardial infarction. In 2003 alcohol septal ablation was recognized by the ACC/ESC Task Force of therapy in hypertrophic cardiomyopathy as an alternative of surgical therapy of HOCM.

Effects of TASH. The method is indicated in very symptomatic patients unresponsive to medical therapy. There is a high clinical success rate (80-90%) with reduction of dyspnoea, angina pectoris, dizziness and of the rate of syncope, and a low rate of major complications (total in hospital mortality 1.06% and 0% in the last 400 consecutive patients of our institution). Before or after alcohol injection potentially harmful abrupt coronary no-flow may occur in some patients (1%) which need the immediate intracoronary injection of urapidil (10 mg). The annual cardiac mortality is low (0.6%/y after discharge of the patients) and corresponds to the beneficial prognostic results after surgery for HOCM. New data indicates to perform TASH already at an earlier clinical state of the disease or even in asymptomatic subjects for prognostic reasons. Important modifications of the method are the remarkable reduction of the amount of ethanol (low alcohol dose era; on average a total of 0.9 ml is injected per session), the adaptation of the injection technique to the angiographic coronary flow characteristics and the introduction of the additional electrophysiologic guidance of the procedure. The intraventricular gradient shows an ongoing reduction by about 60% both at rest and at exercise as assessed by bicycle exercise Doppler echocardiography. This is also true for patients with a gradient at exercise only. Concomitant mitral incompetence is also reduced by at least one degree. Gross anatomic, cellular, molecular biologic and serum enzymatic post-TASH analysis performed by several groups shows beneficial changes in terms of a therapeutic remodelling of the heart. It indicates that alcohol septal ablation may be also considered as a unique research infarct model in man.

In 10-20% of patients with no suitable septal branch anatomy or an atypical, midventricular form of HOCM is present which may make the procedure very difficult or impossible. For these cases a new transventricular, non coronary catheter approach was developed by our group, which is currently tested in a study (endocardial radiofrequency ablation of septal hypertrophy (ERASH)-study) with promising results.

Conclusion. The new catheter based therapy of HOCM by TASH turned out to be the treatment of choice in very symptomatic patients with HOCM. Important new aspects which need to be tested are the use of transcatheter alcohol septal ablation in less symptomatic and asymptomatic patients with HOCM and the transventricular use of radiofrequency energy for septal ablation in patients with abnormal septal vessel anatomy or atypical hypertrophic cardiomyopathy.

L-18

CONTEMPORARY STRATEGIES FOR THE TREATMENT OF CHRONIC TOTAL CORONARY OCCLUSIONS

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The ubiquitous utilization of coronary stents in interventional cardiology practice has transformed percutaneous coronary intervention (PCI) into a predictable procedure, with reduced rates of acute closure and late restenosis compared with balloon angioplasty. More recently the introduction of drug-eluting stents has led to significant reduction of neointimal hyperplasia, further reducing the occurrence of clinical and angiographic restenosis to <10% in most patient subsets with stable and acute coronary syndromes. As a result we have witnessed an unprecedented growth in the number of PCIs performed worldwide and a subsequent steady decline in coronary bypass surgery.

Chronic total occlusions (CTO) are encountered in one third of coronary angiographies (CA) in patients with coronary artery disease (CAD). Despite this fact recanalization of a CTO is attempted in only 8–15% of patients undergoing PCI and it is the most common exclusion criterion for PCI and respectively for CABG referral. This is because CTOs represent the most technically challenging lesion subsets for the interventional cardiologist with procedural success rates considerably lower than those achieved in nonoccluded coronary vessels or acutely occluded arteries. On the other hand successful CTO recanalization leads to global left ventricular function enhancement and significant 10 year improvement in survival. As a result, tremendous interest has recently emerged among interventional cardiologists to learn the principles and develop the advanced skills required to maximize procedural outcomes in chronic coronary occlusions.

In the article are reviewed CTO prevalence, clinical presentation, histopathology, the clinical relevance and rationale for CTO revascularization, patient selection, revascularization strategies and means of improving success rates.

L-21

RADIOFREQUENCY ABLATION IN ATRIAL FIBRILLATION

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Atrial fibrillation is a common cardiac arrhythmia that is associated with decreased survival, numerous cardiovascular morbidities, and a decrease in quality of life. Approximately 25% of ischaemic strokes result from cardiac emboli due to atrial fibrillation.

The goal of this paper is to present currently accepted indications for radiofrequency ablation of AF, with the idea of helping cardiologists to understand better the pathophysiological background of this arrhythmia. The main techniques including circumferential and segmental pulmonary vein ablation are presented and their results are discussed. AF ablation results and complications are compared to the response of the arrhythmia to pharmacological management.

Conclusion. Pulmonary vein isolation offers potential benefits compared to current pharmacological treatments, including the potential to cure AF and to avoid the need for long-term medication management.

L-22

THE IMPORTANCE OF BLOOD PRESSURE CONTROL

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The very high prevalence of cardiovascular diseases makes cardiovascular prevention, both primary and secondary, one of the foremost tasks for health professionals. An effective control of main cardiovascular risk factors (hypertension, smoke, high cholesterol and diabetes) would induce a sharp decrease of the incidence of ischaemic heart disease and stroke. Lifestyle changes (particularly smoke reduction, increase of physical activity and a healthy diet, with increase of fruit and vegetables consumption and reduction of saturated fats), albeit able to reduce the prevalence of cardiovascular diseases without using drugs, are not, at present, provided of an adequate economical support. Effective population strategies for lifestyle changes could, on the contrary, represent an ideal frame to implement the aggressive drug treatment of high-risk subjects.

Hypertension treatment undoubtedly represents a cornerstone in secondary cardiovascular prevention, but sev-

eral issues have to be taken into account:

1. elevated prevalence of arterial hypertension (as much as 50% of adult population in western countries has blood pressure values usually higher than 140/90 mmHg)
2. elevated cost of drug treatment (due to both the high prevalence of hypertension and the cost of new anti-hypertensive drugs)
3. the relationships between blood pressure values and absolute cardiovascular risk is not the same all over the world (i.e. the efficiency of the same therapeutic intervention may be different in different countries).
4. the net benefit (risk reduction) obtained with a given treatment is proportional to basal risk (i.e. the efficiency of the same therapeutic intervention may be different in different subjects).

Subjects with previous cardiovascular disease, being at elevated cardiovascular risk, should therefore receive a prompt and effective comprehensive drug treatment of cardiovascular risk factors (hypertension, high cholesterol) as well as medical and psychological support to encourage lifestyle modifications (smoke cessation, increase of physical activity, adoption of healthy diet habits).

L-23

IS THE CHOICE OF ANTIHYPERTENSIVES A GUESSING GAME?

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Until recently, physicians have been using antihypertensive medications arbitrarily and for considerations other than targeting the exact hemodynamic derangement involved in a particular hypertensive patient (often times changing or combining drugs hoping that ultimately the blood pressure gets controlled). This may not prove to be cost effective and may delay the control of the hypertension. It has been so because of the lack of bedside procedure or laboratory examination that will establish the factors (thoracic fluid volume, peripheral resistance, or both) that are operative in the patient, other than doing invasive procedure using Swan Ganz catheter which carries some risks, requires sophisticated laboratory set up, costly, etc.

With impedance cardiography, it has become possible to monitor the hemodynamic factors, a procedure which costs much less, is easy to perform, can be repeated as often as possible, can be used at the Emergency Room, Intensive and Special Care Units in a hospital and in an Outpatient Department on patients with hypertension. Likewise, an applicability has been seen in patients with congestive heart failure and in those in shock.

L-24

PHYSICAL EXERCISE AND DIABETES MELLITUS II

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Aim. To present the review of our studies on effects of different kinds of exercise (dynamic – static, intensive – moderate) in coronary heart disease (CHD) and diabetes mellitus II (DM II) patients. We investigated the effects of different physical loads performed without and with preliminary standard fat and glucose tests.

Results. The very high and high physical exercises (100%, 90%, 80% from maximal capacity) in patients with CHD and/or DM II led to an atherogenic dyslipidaemia (increase of TG, apoB, apoB/AI ratio, decrease of apoAI, HDL-C levels). The same levels of exercise performed in postprandial state (after standard fat load) significantly aggravated observed lipid changes.

In contrast to this the moderate dynamic exercise (60% from individual maximal level) we demonstrated evidence of improvement the lipid parameters in healthy subjects; in patients with CHD and DM II. Both standard fat and glucose loads decreased PWC parameters in CHD and DM II patients. They caused and prolonged hyperinsulinaemia in patients with impaired oral glucose test. The decrease of blood terminal NO-metabolites was also observed. The high and moderate levels of static exertion both led to the negative changes of lipid parameters.

Forty patients with CHD and DM II were included in the randomized six-month exercise-training program. We used the moderate level of training exertion for this program. At the end of the follow-up period the patients in training group had significant increase of PWC parameters, better quality of life, and improvement in angina symptoms. The decrease of TG, apoB/apoAI, glucose and HbA_{1c} levels were also observed.

L-25

SECONDARY PREVENTION IN PATIENTS WITH CARDIOVASCULAR DISEASES AND TYPE 2 DIABETES

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Background. Patients with cardiovascular diseases (CVD) and diabetes (DM) are considered to have the highest risk for new atherothrombotic CV events among the whole population.

The aim of our study is to observe and analyze the risk profile control in a sample of outpatients and include them in the Complex Intervention Program (CIP).

Methods. All data i.e. personal history, anthropometric and laboratory parameters and also current medication were extracted from the patients' medical reports. The CIP consists of educational interview of lifestyle (especially diet recommendation, smoking intervention and regular weekly physical exercise offer) and start hypolipidemic therapy by micronised fenofibrate 267 mg daily added to the current therapy. Approximately 6 months later the effect of non-pharmacological and pharmacological intervention was assessed.

Results. We included 420 patients with type 2 DM, 227 of them suffered from several cardiovascular events in the past: 105 men aged 70±8 y., 122 women aged 71±9 y. Only 6% men and 9% women achieved recommended blood pressure values (i.e. below 130/80 mmHg) and only 14% of men and 17% of women achieved recommended fasting plasma lipid levels. About 10% men and 5% women still smoke and 60% men and 35% women are ex-smokers. All these patients were included into the CIP. After 6 months the risk profile of diabetic patients with CVD was improved: they reduced waist circumference about 3%, fasting plasma glucose about 7%, improved the lipids: TG decreased about 40% and total chol about 15% (LDL-chol reduced by 18%, HDL-chol increased by 14%). Blood pressure was reduced by 7% in the both systolic and diastolic.

Conclusion. The results provide evidence that the lifestyle intervention (using CIP) is beneficial in high risk patients, i.e. in patients with CVD and type 2 DM. Non-pharmacological approach and fenofibrate therapy added to the current management improved not only lipid profile, but also abdominal obesity, glucose level and blood pressure control, although any changes of appropriate therapy were done; improvement in treatment compliance is suggested.

Supported by the Grant IGA Ministry of Health CZ 82 79 - 3 (2005-2007)

L-26

CLINICAL REALITY OF CARDIOVASCULAR PREVENTION GUIDELINES IN EUROPE: RESULTS FROM EUROASPIRE

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Background. Cardiovascular diseases, of which coronary heart disease (CHD) is the most common, are the major causes of death in Europe, accounting for over 4 million deaths each year. The objective for patients with coronary heart disease (CHD) is to reduce their risk of further coronary and other atherosclerotic events, to improve quality of life, and to increase the chances of survival. The Joint European Societies Recommendations on CVD prevention in clinical practice defined such patients as top priority for prevention with defined lifestyle, risk factor and therapeutic targets. The first Joint European Societies Recommendations on CHD prevention in clinical practice were published in 1994. In 1995-96 a European survey (EUROASPIRE I), was undertaken by the European Society of Cardiology (ESC) in 21 centers from nine European countries. However, the results demonstrated an unacceptable gap between the recommendations and clinical practice. The Second Joint European Societies Recommendations on coronary prevention, published in 1998, united secondary and primary prevention by setting common lifestyles and risk factor goals for patients with established atherosclerotic disease and for those at high risk of developing these diseases. Following the publication of 1998 European Recommendations, a second EUROASPIRE survey (EUROASPIRE II) was conducted in 1999/2000 in 47 centers in fifteen European countries under the auspices of the ESC, Euro Heart Survey programme.

One of the **objectives** of this second survey was to see if the practice of preventive cardiology in coronary patients has improved in those centers which took part in EUROASPIRE I.

Methods. EUROASPIRE I and II surveys were undertaken in the same selected geographical areas and hospitals in the Czech Republic, Finland, France, Germany, Hungary, Italy, the Netherlands, Slovenia and Spain. Six more countries, Belgium, Greece, Ireland, Poland, Sweden and UK, participated only in EUROASPIRE II. Within each hospital all consecutive patients, men and women ≤ 70 years of age at the time of index event or procedure were identified after coronary artery bypass graft (CABG), percutaneous transluminal coronary angioplasty (PTCA), acute myocardial infarction (AMI) and acute myocardial ischaemia, and were interviewed at least 6 months later.

Results. A total of 3569 and 3379 patients were interviewed in the first and second surveys. The prevalence of smoking remained virtually unchanged at 19% vs 21%, but with adverse trends in some countries, and particularly amongst younger patients. The prevalence of obesity increased from 25% to 33%. The proportion of patients with high blood pressure ($\geq 40/90$ mm Hg) was virtually the same (55% vs 54%), whereas the prevalence of elevated total cholesterol (≥ 5 mmol/l) decreased substantially from 86% to 59%. More than four fifths of the patients in both studies took aspirin or other anti-platelet drugs; with a slight increase in the second survey, from 81% to 84%. Beta-blockers increased from 54% in the first to 66% in the second survey, ACE inhibitors- from 30% to 43% and the lipid-lowering drugs - from 32% to 63%.

Conclusions. The adverse lifestyle trends among European coronary patients, particularly the large increase in obesity across all centers, and smoking amongst younger patients, are a cause for concern. So is the lack of any improvement in blood pressure management. Although there is a substantial improvement in the management of cholesterol, the majority of coronary patients are still not achieving the cholesterol goal. Wide variations exist in the use of prophylactic drug therapies between centers. There is a collective failure of medical practice in Europe to achieve the considerable potential among coronary patients to reduce the risk of recurrent disease and death.

L-27

GENETIC TESTING IN CARDIOVASCULAR MEDICINE

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Genetic tests have diverse purposes, including the diagnosis of monogenic and infectious diseases; the identification of future health risks for monogenic and multifactorial diseases; the prediction of drug responses; and the assessment of risks to future children. A comprehensive and continually updated listing of available tests can be found at <http://www.geneclinics.org>. By mid-August 2006, testing for 1,283 diseases is being offered on this site, most of them with monogenic inheritance. Examples for monogenic cardiovascular disorders for which genetic testing is being used include familial hypercholesterolemia, Marfan syndrome, some arrhythmias and cardiomyopathies, etc. However, in some patients a negative test occurs because some mutations are not detected by current DNA testing. This level of genetic complexity means that there are multiple different mutations in the same gene, all of which may lead to disease. For example, about nine hundreds different mutations causing familial hypercholesterolemia have been found in the LDL-receptor gene. Genetic testing can help in evaluating the risk of family members to be at risk for the diagnosed condition. For example, when the causative mutation of a genetic condition is known, presymptomatic diagnosis of family members is often possible and may offer an important opportunity for disease prevention by presymptomatic treatment and/or life-style modification. Genetic tests can also be used to determine genetic contributions to the risk of common multifactorial diseases, such as atherosclerosis, hypertension, thromboses, AMI, stroke, etc., or to the outcome of cardiovascular surgeries. These tests have lower predictive values than most tests for monogenic diseases, but they have potential implications for a larger number of people. An example of such test is factor V Leiden, associated with elevated risk for venous thromboses. Both gene-gene and gene-environment interactions contribute to the overall risk of venous thrombosis. Thus, factor V Leiden is a risk factor for disease rather than an indication of the presence of disease. Similarly, pharmacogenetic testing identifies people who metabolize drugs faster or more slowly than average and who thus might have higher risk for adverse drug reactions or less likelihood of benefiting from treatment. Such testing is being used in patients on oral anticoagulation, statin lipid lowering, adrenergic blockage, etc. For example, carriers of certain variants of the CYP2C9 gene require a reduced dose of acenocumarol and have potentially higher risks of bleeding complications. Development of new genetic tests for risk assessment and drug response is a fast growing area in the cardiovascular medicine.

L-28

RAS MODULATION: NOVEL STRATEGIES FOR REDUCING CARDIOVASCULAR RISK

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Atherosclerosis as a chronic inflammatory condition of the vascular system, can turn into an acute clinical event through rupture of a vulnerable atherosclerotic plaque followed by thrombosis. The connection between angiotensin II (ANG II) and atherogenesis have become increasingly clear in recent years. Inhibition of the activity of tissue angiotensin enzyme (ACE) and the local formation of proinflammatory ANG II is shown by recent findings to be promising therapeutic approach to stabilizing the plaque and thus protecting it from rupturing, thereby avoiding the subsequent clinical events.

The clinical relevance of ACE inhibitor treatment in patients at increased risk of cardiovascular events was proved in different clinical studies. HOPE, EUROPE, PEACE and other studies demonstrated that ACE inhibitors in patients with coronary heart disease reduced the incidence of death, myocardial infarction, stroke. There are also clear indications for ACE inhibitors and ARBs treatment strategies in wide range high risk patients to reduce new cases of diabetes. Large trials confirm the benefit for treatment with ACE inhibitors and ARBs to reduce the composite of myocardial infarction, stroke and death. Ongoing clinical studies (e.g. ONTARGET and TRANSCEND) will provide insight into the impact of RAS blocking therapy on the atherosclerotic process itself.

L-29

WEIGHT REDUCTION AS A FACTOR FOR IMPROVEMENT OF FERTILITY

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Obesity became an epidemic. It increases the cardiovascular risk and decreases the reproductive ability in both genders. Even a slightly elevated BMI at the age of 18 is a risk factor for subsequent anovulatory infertility. Higher rate of oligo- anovulation, unfavorable outcome in assisted reproductive methods, early pregnancy loss, more pregnancy complications, perinatal problems and offspring admissions to neonatal intensive care have been described. The two obesity types in women differ in their pathogenetic mechanisms for reduction of fertility. Central obesity is typical finding in polycystic ovarian syndrome (PCOS), which is the most common (3.5-10%) endocrine disorder in women in reproductive age. It is characterized by an increased risk for diabetes and cardiovascular diseases. Insulin resistance is genetically determined and amplified by visceral obesity. It is the cornerstone in this metabolic disorder, presented in most of the PCOS women. Treatment strategies for PCOS had changed considerably after the new pathogenetic concept has been developed. Metformin has been successfully introduced as an effective tool for diminishing insulin resistance, ovulation induction and increase of pregnancy rate. In gluteo-femoral obesity, leptin and some other hormones and cytokines derived from the adipose tissue are involved in the reproductive failure. Weight reduction through diet and lifestyle modification has been shown to improve fertility in both types of female obesity. There are differences in appetite regulation in PCOS and non-PCOS women, based on cholecystokinin, ghrelin etc. dysregulation, which explain higher dropout rate in the former group in weight-reduction programs and requires appropriate diet recommendations.

L-30

OBESITY AND CARDIOVASCULAR RISK

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Obesity is associated with a number of cardiovascular disorders. The increased cardiac work in Obesity may produce cardiomyopathy and heart failure. Heart weight as a percentage of body weight is lower than in a normal weight control group. Weight loss decreases heart weight linearly related to the degree of weight loss in both men and women. Echocardiographic study of the left ventricular midwall function has been shown compensated hypertension by using cardiac reserve. Enlargement of fat cells increases capillary bed and blood flow and can lead to congestive heart failure. Visceral fat stores in obese patient causes hyperinsulinemia, increasing hepatic triglyceride production, small dense low-density lipoproteins, dyslipoproteinemia and atherosclerosis. Data from many studies

indicates significant increasing of risk of coronary heart disease 3-fold in individuals with a BMI above 29 kg/m² compared with individuals with a BMI under 21 kg/m². Weight gain at all levels of initial BMI has been associated with a graded increase in risk of heart disease. According INTERHEART Study obesity is an independent risk factor. The researchers proposed to identify individuals at high risk for metabolic syndrome by estimating fasting serum insulin, triglycerides, HDL cholesterol, waist circumference. Dyslipidaemia may be important to increase cardiovascular risk in the relationship of BMI. A positive correlation for central fat and triglycerides and the inverse relationship for HDL cholesterol is evident. Scientific position of American Heart Association is that now Obesity is recognized as a major risk factor for coronary heart disease which can lead to heart attack. Even when there are no adverse effects on the known risk factors Obesity itself increases cardiovascular risk. Now there are some estimation programmes established for the prediction of cardiovascular risk – The Framingham Heart Study risk equation, Precard, which only includes body weight, HeartScore, Procarn, UKPDS risk engine for subjects with diabetes type 2, but in general practice physicians often underestimate their patients' cardiovascular risk.

L-31

LOW EXERCISE CAPACITY AS A RISK FACTOR FOR CARDIAC MORBIDITY, MORTALITY AND STROKE

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Exercise capacity has a high prognostic significance in patients with cardiovascular diseases and in asymptomatic subjects as well. Symptom limited exercise testing is the best way to assess the physical capacity. It is not widely recommended for healthy people, because of the low sensitivity and specificity. However several studies have demonstrated that a very important information can be obtained from analyzing of the results of the exercise testing. The analyses show that the risk of coronary artery disease (CAD) or cardiovascular disease (CVD) decreases linearly in association with increasing percentages of physical activity. The different reasons to stop the test can predict cardiac morbidity. Those, who terminate the test because of the impaired breathing, have significantly higher coronary artery disease. In patients with already proved CAD, the mortality rate is expected to be low if they have good exercise capacity more than 7 MET, together with normal stress ECG without chest pain. Exercise test duration has also a strong inverse relation to CVD related and non-CVD related mortality. Other way to assess the physical fitness is by score method: self-reported functional capacity through different questionnaires. Among the women with suspected ischemia higher physical fitness scores are independently associated with less angiographic CAD and lower risk for cardiovascular events while the measures of obesity are not independently associated with these outcomes. In conclusion the exercise capacity has a prognostic predictive power for CVD, stroke and death. Increased physical activity, sport or regular walking is associated with substantially reduced risk for CV events. Clinicians should educate the patients about the benefits of exercise. The exercise test should be added to the screening process like a routine examination every 5 years for asymptomatic men above 40 and women above 50 years of age.

L-33

A NEW METHOD FOR EVALUATION OF CARDIOVASCULAR CHANGES DURING SCUBA AND BREATHOLD DIVE

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The study of cardiovascular changes during Breath-hold dive and SCUBA dive has been hampered by the difficulty of studying subjects fully immersed in water. Most of the knowledge in this field has been obtained on head out immersed subjects. The recent development of a submersible echocardiographic machine allowed the study of subjects during breath-hold dive and SCUBA dives at different depths. The method consists of an ecocardiography inserted in a diving-suit with a system of atmospheric balancing through a valve of unloading and connected erogatore to a cylinder of compressed air. The operator can manage this apparatus as in surface through a device that allows to introduce a hand and digit the keys of the apparatus. It's necessary that the operator, further to be a Cardiologist, has to be an experienced scuba diver. In this way we can evaluate the cardiovascular modifications up to thirty meters deep and we can follow the scuba and breath-old diver in the varied steps; those physiological modifications have been till now only hypothesis.

L-34

CARDIOVASCULAR CHANGES DURING BREATHOLD DIVING IN HUMANS

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Cardiovascular changes in humans during breath-hold diving are only partially known due to the technical difficulty of studying subjects fully immersed in water. Most of the knowledge in this field has been obtained on head-out immersed subjects. Recently, a submersible echocardiograph has been developed allowing the study of subjects during breath-hold diving at different depths.

Ten male subjects were studied by Doppler echocardiography before and during breath-hold diving at 3m depth. In addition 14 male subjects were studied, using the same protocol, before and during breath-hold diving at 10m depth.

At 3m depth significant reductions in heart rate, stroke volume, cardiac output, left atrial dimensions, and deceleration time of early diastolic transmitral flow (DTE) were observed. At 10m depth similar but more pronounced changes occurred. In particular, increase in E peak flow velocity became significant, while DTE decreased to 51%. At both depths dimensions of right cardiac chambers remained unchanged.

Thus breath-hold diving induced a significant decrease in cardiac output caused by the reduction of both stroke volume and heart rate. The absence of dimensional changes in the right chambers suggests that most of the pulmonary blood shift occurred before cardiac imaging, while the reduced dimensions of left atrium associated to decreased DTE might be explained, at least in part, by the constriction exerted on the heart by high environmental pressure. In conclusion, underwater ultrasound cardiac imaging allowed the documentation of large, clearly appreciable cardiovascular morpho-functional changes during shallow diving, suggesting new mechanistic interpretation of hemodynamic changes.

ORAL PRESENTATIONS

0-01

THE CARDIOLOGISTS' CONTINUOUS EDUCATION AND ITS INFLUENCE ON THE MANAGEMENT OF HYPERTENSION WITH RESPECT TO THE TARGET LEVELS ACHIEVEMENT

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Aim. We analyzed the cardiologists' knowledge about the target levels (TLs) treatment achievement in patients (pts) with arterial hypertension (AH) (March 2003 - June 2004). The study was a part of BULPRAKT-HEART-study (BULgarian PRospective Analysis of the physicians' Knowledge and Therapy choice in HEART Disease Treatment And Prophylaxis).

Methods. We carried out 2 inquiries with 400 cardiologists and 298 cardiologists respectively studying their knowledge about the TLs treatment. In between the both inquiries medical education courses were carried out aiming the treatment of cardiovascular diseases according to the existing clinical guidelines.

Results. The 1st inquiry revealed the following data: a strong trend to reach the blood pressure TLs in pts with uncomplicated AH - <140/90 mmHg - 97% of cardiologists and >140/90 mmHg - 3%; in pts with complicated AH 59% of cardiologists aimed the treatment to values <130/85 mmHg and 41% - to values >130/85 mmHg; in pts with diabetes 22% of cardiologists considered the TLs of blood pressure >130/80 mmHg and 78% - <130/80 mmHg; in pts with AH and proteinuria - for 25% of cardiologists targeted treatment values were >130/85 and for 53% higher than 125/75 mmHg, for 75% <130/85 mmHg and for 47% <125/75 mmHg.

The 2nd inquiry data after active education program were as follows: 99% of cardiologists considered values <140/90 mmHg as being correct in pts with uncomplicated AH and for complicated AH - <130/85 mmHg - 89% of cardiologists; 93% of specialists pointed out that values <130/80 mmHg had to be targeted in pts with AH and diabetes and <125/75 mmHg - in pts with AH and proteinuria (more than 1 g protein daily) (76% of cardiologists).

Conclusions. After a one-year education period the cardiologists' knowledge about treatment targets in pts with AH associated with different clinical settings changed positively. Only a small part of them showed no information about the TLs of blood pressure in pts with AH and diabetes, complicated hypertension and/or concomitant proteinuria.

0-02

TABACCOISM: EFFICACY OF DIFERENT METHODS ON TABAGISM CESSATION

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Introduction/Aim. With this study, we pretend to evaluate the efficiency by two methodologies of intervention on tabagism cessation. The "Gradual" method, whose purpose is that the subject, reduce gradually the number of cigarettes till total abstinence and the "D Day" method, in which, the subject chooses the definitive day to stop smoking and engages oneself not smoking anymore from that day.

Material Methods. In this study we analyse one sample of 21 persons treated in our unit between 2002 and

2004: 14 adult male and 7 adult female, aged between 28 and 75 years (average: 52 years). In our unit we used a combination of psychological and pharmacological interventions combined with exercise, after a medical evaluation.

For the study, one questionnaire was applied by phone 2 years later. The data was treated by descriptive statistics in SPSS.

Results/Discussion.

		Continue Abstinent		Score
		Yes	No	
Method	D Day	7	1	8
	Gradual	1	5	6
	Give up	0	7	7
Score		8	13	21

Table 1. From the 8 persons that choose the D Day method, 7 still keep abstainers. From the 6 that select the Gradual method, only 1 person is now abstainer. The 5 persons that are not abstainer didn't use any pharmacology complement (patch) and from the 14 persons that realize tabagism cessation intervention 13 have psychological support. These results indicate a better efficiency of smoking cessation with the D Day method. However, there was a about 33% of patients give up the smoking cessation intervention.

Conclusion. The D Day method has been much more successful than the Gradual method, however, interventions that combine counselling and follow-up with pharmacology, from medicine to behaviour change and exercise, contribute substantially to smoking cessation.

0-03

COST-EFFECTIVENESS OF THE I COURSE "LIVING WITH CORONARY HEART DISEASE".

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Backgrounds. At the "Cardiovascular Prevention and Rehabilitation Unit" we performed a randomized controlled study about education, in patients with ischemic heart disease, in the year of 2003. The intervention group (n=20) attended a course of 12 hours about: Cardiac Rehabilitation, Diet, and Psychological Factors. The control group (n=20) was under "Usual Care". They were all evaluated by questionnaires. We present here the Cost-Effectiveness of this course 3 years later, in terms of General and Cardiovascular Mortality.

Methods. The data for this study were Clinical Data and Questionnaires about Risk Factors, Nutritional Habits, MacNew Heart Disease Health-related Quality of Life Questionnaire and Hospital Anxiety & Depression Scale - HADS. We applied the same evaluations/questionnaires, studied their survival/follow-up and health consumption/expenses, in 2006.

Results.

	TOTAL
Professors	936,7
Administrative	50
Others	217,6
DIRECT COSTS	1.204,3
Transportations	75
Work Losses	1329,4
INDIRECT COSTS	1.404,4
TOTAL	2.608,7 €

Table 1. Direct and indirect costs of the Course (in €)

	MEDICATION MONTH	HOSPITAL ADMISSIONS	EMERGENCY ROOM
CONTROL	74,1	2,2	2,7
COURSE	72,6	1,5	1,3

Table 2. Health Consumations (in €)

	2003	2006	mortality
CONTROL	n = 20	Evaluated=10 Lost=4 Refuse=2	General 4 (Cardiac 3)
COURSE	n = 20	Evaluated=16 Lost=2	General 2 (Cardiac 1)

Table 3. Mortality and follow-up: 2003 and 2006

Discussion/Conclusion. This study suggests a decrease in general and cardiovascular mortality in the intervention/course group, as savings for the National Health System, in medications and hospital expenses, with an

individual expense of 130 € in 3 years. The major limitation was the small sample size and poor follow-up. For the future, the evaluation moments should be yearly and more effective, and the aim will be a desirable reduction of the costs of the course, so that it becomes even more cost-effective.

O-04

EFFECT OF CHRONIC LOW DOSE L-NAME TREATMENT ON NITRIC OXIDE PRODUCTION IN CARDIOVASCULAR SYSTEM OF STRESS EXPOSED RATS

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The aim of this study was to investigate the effect of long-term low dose L-NAME treatment on nitric oxide synthase activity in the left ventricle and aorta of normotensive and borderline hypertensive rats (BHR) during chronic social stress exposure. Male, 12 weeks old, borderline hypertensive rats (BHR, offspring of spontaneously hypertensive dams and Wistar sires) and Wistar rats were exposed to crowding stress (200 cm² per rat, 5 rats per cage), L-NAME treatment (1.5 mg/kg/day in drinking water) or their combination for 8 weeks. Control rats were kept 4 rats per cage (480 cm² per rat). Blood pressure (BP) of Wistar and BHR before experiment (determined by tail-cuff method) was 111±3 and 136±2 mm Hg. Stress alone gradually elevated BP only in BHR. L-NAME elevated BP on weeks 3 and 6 vs. control in both W and BHR. After this period, BP decreased in both groups investigated. At the end of the experiment no differences in BP were observed in Wistar (vs. control) while BP of BHR rats was still significantly elevated vs. control. Combined L-NAME+stress treatment resulted in significant elevation of BP in both W and BHR at the end of experiment. The left ventricle-to-body weight ratio was elevated in W exposed to L-NAME+stress as well as in all BHR groups vs. control BHR. Nitric oxide synthase activity was determined by conversion of [3H]arginine to [3H]citrulline in the left ventricle and aorta. Chronic crowding failed to affect NOS activity in Wistar rats but it significantly reduced NO production in BHR in both tissues investigated. L-NAME alone paradoxically significantly elevated NO synthase activity in the cardiovascular system of Wistar rats. In BHR, L-NAME activated of NO synthase in the left ventricle while no alterations were observed in the aorta. However, simultaneous exposure to both stress and L-NAME resulted in more than 50% reduction of NO synthase activity in the aorta and left ventricle of both phenotypes.

In conclusion, chronic low-dose L-NAME treatment and stress alone led to development of hypertension only in BHR, however their combination resulted in hypertension in both BHR and Wistar. Simultaneous exposure to both factors was associated with the development of left ventricular hypertrophy and reduced left ventricular and vascular NO synthesis in both phenotypes. The study was supported by the VEGA-2/4156/04 and APVT-51-018004.

O-05

EFFECT OF CHRONIC RED WINE POLYPHENOLS TREATMENT ON THE REACTIVITY OF MESENTERIC ARTERY OF WISTAR-KYOTO (NORMOTENSIVE) RATS EXPOSED TO CHRONIC SOCIAL STRESS

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Background. Red wine polyphenols have been reported to possess beneficial properties for preventing cardiovascular diseases but their effect on hemodynamic and functional cardiovascular changes during chronic social stress have not been studied. The aim of this study was to investigate the effect of red wine polyphenolic compounds (ProvinolsTM) on blood pressure (BP), nitric oxide synthase (NOS) activity and vascular function in normotensive Wistar-Kyoto (WKY) rats exposed to chronic social stress due to crowding.

Method. Experiment was performed using twelve weeks old males WKY rats. Rats were randomly divided into four groups: control (480 square cm per rat), group treated with ProvinolsTM (20 mg/kg/day, 480 square cm per rat, 8 weeks), stressed group (200 square cm per rat, 8 weeks) and stressed group treated with ProvinolsTM (20 mg/kg/day, 8 weeks). BP was measured using tail-cuff plethysmography. NOS activity was determined by conversion of [3H]arginine to [3H]citrulline in the thoracic aorta.

Rings of the isolated the 1st branches of the superior mesenteric artery were mounted to the Mulvany-Halpern myograph for measurement of vasoreactivity. Endothelium-dependent relaxation was evaluated as the responses of phenylephrine (Phe) - precontracted (10^{-4} mol/l) preparations to acetylcholine (Ach, 10^{-9} – 10^{-5} mol/l).

Results. Eight weeks of crowding failed to affect BP of WKY rats significantly vs. control. However, chronic ProvinolsTM treatment significantly reduced blood pressure against crowded rats ($p < 0.03$). Crowding significantly increased NOS activity in the aorta vs. control ($p < 0.05$) and ProvinolsTM alone had no effect on aortic NOS activity. Interestingly, ProvinolsTM blunted the elevation of NO production in rats simultaneously exposed to stress. Relaxation of the mesenteric artery was significantly increased in the stressed group vs. control ($p < 0.002$) and ProvinolsTM, in contrast to NO production, accentuated this effect.

Conclusion. Increased endothelium-dependent relaxation and increased NO synthesis in the aorta in crowded rats may represent the adaptation mechanisms, resulting in unaltered values of blood pressure during chronic stress. Since elevated vasorelaxation was observed in both ProvinolsTM treated groups of rats without elevation of NO production, other mechanisms may be involved in improved vasorelaxation during simultaneous stress and ProvinolsTM treatment.

The study was supported by the grant No. APVT-51-018004.

0-06

DO BULGARIAN CARDIOLOGISTS KNOW THE DEFINED TARGET LEVELS FOR BLOOD PRESSURE CONTROL?

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Aim. The aim of the study was to estimate the Bulgarian cardiologists' knowledge about the blood pressure (BP) treatment goals in patients (pts) with AH. During a 2 years period we followed the evolution of the cardiologists' knowledge and this analysis was a part of the BULPRAKT-HEART-study (BULgarian PRospective Analysis of the physicians' Knowledge and Therapy choice in HEART Disease Treatment And Prophylaxis).

Design and methods. We inquired 3 times during a 2 years period the specialists testing their knowledge about the treatment of AH. The 1st inquiry (the 1st half of 2003) revealed the basic information about the management of patients with complicated and uncomplicated AH by 400 cardiologists. The evolution of the cardiologists' knowledge was estimated by using the 2nd and 3rd inquiries carried out in the middle (298 cardiologists) and in the end of the year 2004 (217 cardiologists).

Results. The 1st inquiry revealed that 97% of the cardiologists aimed their treatment of AH to target levels $< 140/90$ mmHg in patients without complications and in patients with complications the target levels for 55% of specialists were $< 130/80$ mmHg. 74% of cardiologists considered that target levels in patients with diabetes were $< 130/80$ mmHg. In the 2nd inquiry 99% of the cardiologists considered that patients' BP in cases with hypertension but no complications should be $< 140/90$ mmHg and in cases with complications 89% of the cardiologists considered BP levels $< 130/85$ mmHg. The BP of the hypertensive patients with diabetes was considered to be maintained $< 130/80$ mmHg in 93%. The 3rd inquiry estimates the desirable BP levels in uncomplicated hypertension to be as average $< 135/85$ mmHg, in young hypertensive patients - $< 131/82$ mmHg, in patients with diabetes - $< 128/81$ mmHg and in pts after stroke or other forms of cerebrovascular diseases - $< 134/84$ mmHg.

Conclusions. The Bulgarian cardiologists had improved their knowledge concerning the BP target levels. There was an increasing number of specialists following the international guidelines target levels. Actually the Bulgarian cardiologists' treatment of hypertension tended to reach lower levels than those accepted in the official papers.

0-07

KNOWLEDGE OF BULGARIAN PHYSICIANS REGARDING RISK FACTOR CONTROL IN CORONARY ARTERY DISEASED PATIENTS

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Aim. The aim of this study was to analyze the approach of Bulgarian physicians towards control of risk factors (blood pressure, blood lipids) in patients (pts) with coronary artery disease (CAD).

Materials and methods. 554 general practitioners (GPs), 307 cardiologists with outpatient practice (Cardios)

and 531 physicians working in hospitals (Hosp) were interviewed. The GPs' practices comprised 494112 people older than 18 years, among whom there were 28916 patient with stable angina. The study was part of the BULPRAKT-HEART-study (BULgarian PROspective Analysis of the physicians' Knowledge and Therapy choice in HEART Disease Treatment And Prophylaxis).

Physicians' familiarity with the target levels (TLs) of blood pressure (BP) (in mmHg) in pts with CAD for achieving adequate control is as follows:

	<160/90	<140/90	<130/85	<120/80
GPs	1%	14%	63%	22%
Cardios	0%	20%	66%	14%
Hosp	0%	15%	64%	21%

Physicians' familiarity with the TLs of total cholesterol (C) (in mmol/l) in pts with CAD is as follows:

	<7.0	<6.2	<5.5	<5.0	<4.5
GPs	1%	5%	14%	39%	40%
Cardios	0%	4%	6%	39%	50%
Hosp	1%	3%	8%	40%	47%

Physicians' familiarity with the TLs of LDL-C (in mmol/l) in pts with CAD is as follows:

	<4.1	<3.2	<3.0	<2.6	<2.5
GPs	3%	14%	10%	25%	49%
Cardios	2%	9%	11%	29%	49%
Hosp	3%	8%	11%	35%	43%

Results.

Conclusions. This study shows that less than 1/5 of the physicians are not well familiar with the TLs of BP in pts with CAD. Approximately 2/3 are well informed about the TLs and 1/5 of them target lower values. About 40-50% of the physicians are familiar with the TLs of serum cholesterol in pts with CAD. The majority of those not familiar with the exact values target total cholesterol below 5,0 mmol/l. About ¾ of the physicians try to reach LDL-C levels below 2,6 mmol/l, while 50% of them know the exact TLs of below 2,5 mmol/l. Nevertheless, they are not well familiar of TLs for LDL-C as described in ESC guidelines published in 2003.

0-08

SENSITIVITY AND SPECIFICITY OF HI-RES ELECTROCARDIOGRAPHY (HFQRS) IN THE DIAGNOSE OF MIOCARDIC DAMAGE IN A HYPERTENSE POPULATION IN THE CITY OF MERIDA

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The hi-res electrocardiography (HFQRS) in general, and the Reduced Amplitude Zone (RAZ) score in particular, has been very useful in the detection of precocious miocardic damage in ischaemic patients. Nevertheless it is not known the cut-off RAZ score in hypertensive patients. We designed this study to address this issue.

Material and Methods. A conventional electrocardiogram of 12 derivations was obtained, followed by accomplishment of a hi-res ECG during a period of 10 minutes of controlled breathing (15 breathings per minute), in both groups of patient (hypertense and control). A total of 51 people were studied: A hypertense group of patients of 22 people and a group control of 29 people, grouped by sex and age. The data of hi-res electrocardiography were used to calculate the Reduced Amplitude Zone (RAZ). A receiver operator curve (ROC) was constructed to appreciate the usefulness of the method.

Results. According to the results of ROC curve, a value of RAZ score of 36, has a sensitivity and a specificity of 50% and 96% respectively, with an area under the curve equal to 0,73. **Conclusions:** The use of the hi-res electrocardiography, and the RAZ score, provide useful information, for the detection of precocious of myocardal damage in patients with systemic arterial hypertension.

0-09

MYOCARDIAL VIABILITY DURING STRESS-ECHO IN PATIENTS WITH SEVERE ISCHEMIC HEART FAILURE AND PAPILLARY MUSCLE DISTORTION AS A PROGNOSTIC FACTOR FOR POSTOPERATIVE MITRAL VALVE COMPETENCE

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One of the important leadings of the mitral valve surgery in patients with coronary artery disease is a preservation of the normal physiology and mobility of the mitral valve apparatus. Septal-lateral annular dilatation has been shown to be the principal cause of the leaflet malcoaptation for dilated cardiomyopathy. Although in patients with coronary artery disease, ischemic or scared myocardium may be the primary cause of mitral valve incompetence due to papillary muscle dysfunction and/or its distortion.

The estimation of link between the myocardial viability in area of papillary muscle and left ventricular (LV) remodeling on the mitral valve (MV) competence after its surgery in patients with end-stage ischemic heart failure was aimed.

Cohort of 21 patients (LVEF 0.31 ± 0.04 , NYHA 3.1 ± 0.5 , mitral regurgitation (MR) >3 degree, systolic pulmonary artery pressure (PAP) 50 ± 6.9 mm Hg, EDV 245.2 ± 45.6 ml, WMI 2.56 ± 0.34 , was undergone low dose dobutamine stress-echo mean 3,1 days before open heart surgery. All patients were operated in similar condition with simultaneous technique of coronary artery bypass grafting (mean shunts 2.9 ± 0.4), left ventricular plasty (for apical aneurysm – 12 cases, for diffuse LV dilatation – 14 cases) and mitral valve plasty (durable original ring- 16 pts, Calafiore-10 pts). Mean follow-up was 5,5 months (1-12 months). Two patients (9.5%) died before discharge, one patient (4.76%) - at 6 months after surgery. The rest of patients had no shunt dysfunction in follow-up.

For assessment of MV leakage was used biplane color Doppler, VTI of the regurgitant jet in CW, diameter of "vena contracta". The angle between the MV axis and antero-lateral papillary muscle axis (Angle) as well as diastolic spherical index (SI, gr.1-0,82 and gr.2-0,76, p between group $>0,05$) were applied for estimation of LV remodeling.

Results. For whole cohort the positive inotropic response of LV during low dose dobutamine echo was revealed ($p=0.0004$, pair t-test). Accordingly dobutamine dynamics of the segments in area of antero-lateral papillary muscle (16-segments model) the patients were divided on to 2 groups: 1-11 pts with no dynamics of contractility (scar), 2-15 pts with improvement of the contractility of akinetic segment or induced ischemia of the hypokinetic segment (viable myocardium). Groups were similar in the size of LV, MR degree, LVEF, SI, technique of MV surgery.

The data analysis was performed at 7-9 day after surgery (before discharge). All patients demonstrated statistically significant (pair t-test) improving of the left ventricular pump function ($p=0,003$), WMI ($p=0,0002$), decreasing of mitral regurgitation degree ($p=0,004$), improving of the functional status ($p<0,001$). In spite of similar basal condition and type of surgery groups were different in the dynamics of MR early after surgery (MR grade $2,1 \pm 0,4$ in gr.1 and $0,9 \pm 0,3$ in gr.2, p between groups 0,01).

The results are showed in the table.

	EDD,mm	ESD,mm	VTI MR basal, cm	VTI MR post operation, cm	MR grade post operation
cohort, n=26	63,3 $\pm$ 8,74	49,0 $\pm$ 9,3	107,46 $\pm$ 37,2	42,77 $\pm$ 29,4	1,7 $\pm$ 0,7
group 1, n=11	59,7 $\pm$ 10,1	48,1 $\pm$ 7,9	115,7 $\pm$ 21,8	78,7 $\pm$ 25,1 #	2,1 $\pm$ 0,4 #
group 2, n=15	64,6 $\pm$ 8,5	49,9 $\pm$ 10,2	105,2 $\pm$ 41,4	32,1 $\pm$ 21,3 #	0,9 $\pm$ 0,3 #

#- $p<0,05$ between 1 and 2 group.

Conclusion. Bypass grafting leads to improving of the LV wall contractility and decreasing of the MV regurgitation. The positive inotropic response of the antero-lateral papillary muscle segment followed by statistically significant improving of the mitral valve closing function in spite of basal papillary muscle distortion and non elliptic form of the LV.

O-10

THE NEW METHOD OF NON-INVASIVE ASSESSMENT OF THE LEFT VENTRICULAR CONTRACTILITY DURING THE EXERCISE STRESS-ECHO

A. Bobrov, S. Shulenin, L. Bobrov

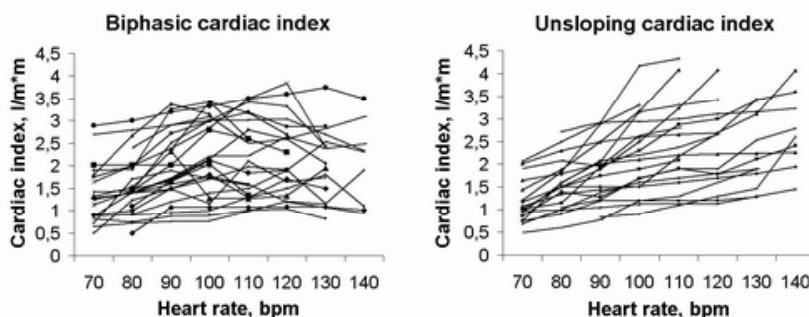
Medical military academy, Saint-Petersburg, Russia

Background. In healthy men the exercise leads to increasing of the heart rate and cardiac output right up to the maximal heart rate. Decreasing of cardiac output during heart rate growth identifies the decompensation of the heart work.

Aim. To assess the feasibility and prognostic value of noninvasive estimation of cardiac index (CI) during the exercise stress-echo.

Methods. We enrolled 47 patients with mild stable angina (males, age 52.5 ± 1.3 years, ejection fraction = $53.2 \pm 1.5\%$, without wall motion abnormalities) referred for the exercise stress-echo with cycling. During the exercise with the help of continuous wave Doppler the blood flow in the ascending aorta was registered. CI was calculated on the heart rate 70, 80, 90, 100, 110, 120, 130, 140 bpm. Ischemic wall motion abnormalities of left ventricle were detected. Cardiac frequency at which CI starts its descending limb called critical heart rate.

Results. 26 patients (age 52.7 ± 1.5 years, ejection fraction = $52.3 \pm 1.7\%$) had abnormal biphasic, and 21 patients (age 52.4 ± 2.2 years, ejection fraction = $54.3 \pm 1.7\%$) had normal unsloping CI (figure). Ischemic wall motion abnormalities of the left ventricular were registered in 76.9 % patients of biphasic CI group and in 14.3 % patients of unsloping CI group, $p < 0.05$. Ischemic wall motion abnormalities index were 1.354 ± 0.056 in biphasic CI group and 1.076 ± 0.033 in unsloping CI group, $p < 0.05$. Critical heart rate in biphasic CI group was 112.6 ± 2.7 bpm, submaximal heart rate in unsloping CI group was 131.0 ± 3.4 bpm, $p < 0.05$.



Conclusion. Noninvasive estimation of cardiac output is feasible during the exercise stress-echo. A biphasic CI pattern during the exercise stress echo identifies more frequent ischemic wall motion abnormalities of the left ventricular.

PRELIMINARY RESULTS OF RESEARCHES OF PHYSICOMECHANICAL AND BIOLOGICAL PROPERTIES OF THE BELARUSIAN CARDIAC SUPPORT DEVICE

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¹A. Charkovsky, ¹I. Thoreva, O. Kozlov, V. Dachevsky, ²I. Tarasjuk

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³ Metal-polymer research institute, Belarus

Background. The passive cardiomyoplasty is directed to prevention of the spherical remodeling of the ventricles. We examined the mechanical properties and biocompatibility of the cardiac support device (CSD) of our design.

Methods: Strength of the material from a complex polyester string was estimated by tests for a stretching of the samples which have been cut out in longitudinal and cross-section directions. At the second stage, samples of CSD were fixed on simulators of the left ventricle (LV) and their stretching was made by means of the second elastic frame placed between basic plates of stand INSTRON 5567 connected hydraulically with simulator. Processing of the material was carried out by radiation, ethylene-oxide and steam in a sterilizing mode. The samples after alcohol-etheric processing were as a control group.

Eight dogs underwent a left-sided thoracotomy. The CSD were placed on the intact hearts around the ventricles and anchored at the AV groove. The control of cardiac activity was carried out before operation and after 1 month. For estimation of degree of transversal compression there were intraoperatively measured: central venous pressure (CVP), end-systolic (ESP) and end-diastolic (EDP) pressure in right (RV) and left ventricles, pulmonary artery (PAP) pressure (before and after implantation).

Results: Tests allowed to estimate ultimate strain and tensile strength of the material (figure 1) and the CSD. Strength in a cross-section direction is approximately twice higher than strength in a longitudinal direction at any way of sterilization. After sterilization by autoclaving the loss of strength was 5% in comparison with a cross-section direction. The best complex parameters of strength take place after sterilization by radiation and ethylene oxide.

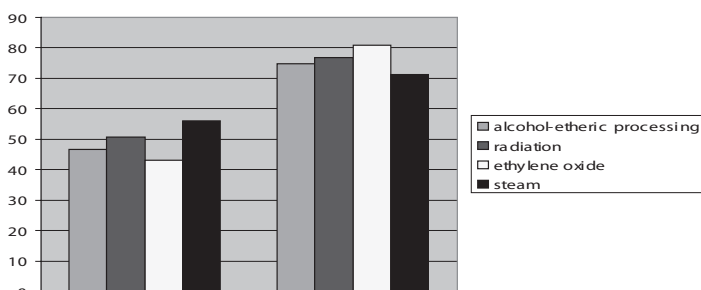


Figure 1. The tensile strength of the material depending on a sterilizing mode

Controlled compression of the ventricles leads to increase of CVP ($p = 0,0067$) and RV EDP ($p = 0,01$) (table 1).

Parameters	Before implantation	After implantation	P-level
CVP, mmH2O.	20,0 ± 0,3	40, 0 ± 0,4	0,0067
LV ESP, mmHg	105,0 ± 6,5	92,5 ± 5,5	0,21
LV EDP, mmHg.	42,5 ± 2,9	49,0 ± 2,6	0,72
RV ESP, mmHg	26,5 ± 1,1	30,0 ± 2,8	0,06
RV EDP, mmHg	8,0 ± 2,8	25,5 ± 3,7	0,01
PAP syst, mmHg	28,0 ± 1,4	29,0 ± 1,7	0,32
PAP diast, mmHg	19,0 ± 1,5	21,0 ± 2,2	0,47

Table 1. Cardiac hemodynamics' parameters

Conclusions. Sterilization doesn't lead to essential changes of mechanical characteristics of CSD. Implanted device doesn't disturb hemodynamic, there are no symptoms of constriction of the hearts (table 2).

Parameters	Before operation	After operation	P-level
LV EDD, mm	33,2 ± 0,8	34,0 ± 0,4	0,7
LV ESD, mm	21,5 ± 0,8	22,5 ± 0,4	0,2
LV EDV, ml	46,1 ± 2,5	48,0 ± 0,7	0,7
LV ESV, ml	15,2 ± 1,5	17,5 ± 0,8	0,5
EF, %	64,7 ± 1,5	62,5 ± 1,8	0,3
RV EDD, mm	21,5 ± 1,0	24,5 ± 0,8	0,1

Table 2. Echocardiographic parameters

If 6 the months' results are successful a clinical trial will be started.

0-12

THE CLINICAL USEFULNESS OF EXERCISE-INDUCED INCREASE IN U WAVE DEFLECTION IN THE DIAGNOSIS OF CORONARY ARTERY DISEASE

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Electrocardiography treadmill exercise test (TET) using conventional ST segment analysis is a well established office based procedure that answers important clinical questions related to heart diseases. However, the value of TET in correlating ischemic location with the culprit coronary artery is limited. Recently, an increase in U wave deflection on exercise has been reported to be a useful marker not only for coronary artery disease (CAD) but also for localizing coronary artery narrowing.

Objectives. To determine the prevalence of exercise induced increase in U wave deflection in the general population and to evaluate the potential role of U wave analysis in the diagnosis of CAD in addition to the conventional ST segment analysis of TET.

Methods and results. A retrospective review of records of 90 patients who underwent TET using the modified Bruce protocol showed that an exercise induced increase in the U wave has a prevalence of 3.5% in the general population, while in 45 pts suspected of having CAD, who underwent TET and coronary angiography the prevalence was 54.8%. In the diagnosis of CAD a positive TET based on ST segment analysis has a sensitivity of 83.2%, specificity of 35% and positive predictive value of 75.2%. On the other hand, an exercise induced increase in the (+) U wave in the right precordial leads has a sensitivity of 35%, specificity of 92.5% and (+) predictive value of 91.9%. An increase in the (-) U wave in the inferior leads however, has a sensitivity of 42.1%, specificity of 97.5% and (+) predictive value of 97.6% in the diagnosis of CAD.

Conclusion. An increase in the U wave deflection during TET appears to be a specific marker not only for CAD but also for localizing coronary artery lesions. It increases the specificity of TET without significantly affecting its sensitivity. If interpreted together with ST segment depression it increases the probability for diagnosing CAD.

0-13

RELATION BETWEEN HIGH FREQUENCY ELECTROCARDIOGRAPHY AND THE LEVELS OF SYSTOLIC ARTERIAL PRESSURE

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Introduction. The most recent report of the World Health Organization has identified hypertension as the most important cause of premature death in the general population and as the main risk factor to develop congestive cardiac insufficiency, reason why looking for methods that can help detect myocardial precocious damage in patients

with high level of systolic arterial pressure has much importance. The electrocardiography of high frequency, already has demonstrated helpfulness detecting precocious damage in ischaemic cardiopathy but has not been studied in the hypertense patient. We propose to compare the Reduced Amplitude Zones (RAZ) of the high frequency electrocardiography with the systolic arterial pressure.

Material and methods. A conventional electrocardiogram of 12 derivations was obtained, followed by accomplishment of a hi-res ECG during 10 minutes of controlled breathing (15 breathings per minute), in both groups of patients (hypertensive and control). Both groups included 51 people grouped by sex and age. Data of the hi-res electrocardiography were used to calculate the Reduced Zone of Amplitude (RAZ).

Results. In the hypertense group a score of $35,77 \pm 15$ was obtained, compare to 24 ± 8 in the control group. That comparison is statistically significant different with $p=0.004$. The correlation between the RAZ score has a $r=0,37$.

Conclusions. The RAZ score obtained by high frequency electrocardiography is different in the hypertensive patients compare to the score in the control group. That correlates in a direct and positive way with systolic arterial pressure.

POSTER ABSTRACTS

P-01

NEWLY DIAGNOSED ARTERIAL HYPERTENSION, IMPAIRED GLUCOSE TOLERANCE OR DIABETES MELLITUS AND DISLIPIDAEMIAS IN PATIENTS WITH AMI ADMITTED IN THE CARDIOLOGY DEPARTMENT AT THE SHUMEN HOSPITAL IN SIX MONTHS PERIOD(JULY-DECEMBER 2005)

R. Radeva

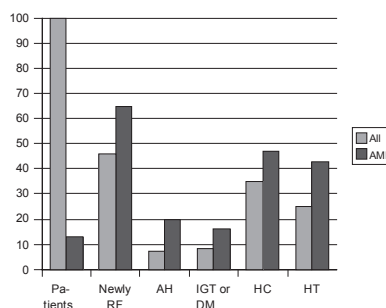
Department of cardiology, Shumen Hospital, Bulgaria

Background. Some of the major and independent risk factors for CHD are elevated blood pressure, elevated serum total cholesterol and diabetes mellitus. The patients, admitted in the Cardiology department, have already clinically manifested CHD, which made possible to evaluate the efficacy of primary prevention. **Methods**

Methods. This study enrolled 696 patients with acute MI who were admitted to Cardiology department at Shumen Hospital. Acute MI was diagnosed by chest pain persisting longer than 30 minutes, concomitant ECG changes and peak creatine kinase and its MB-fraction concentration had to be more than twice the normal upper limit. The definition of hypertension is blood pressure greater than 140/90. Impaired glucose tolerance was associated with blood glucose value of greater than 7,8 mmol/l, for diabetes – 11,1 mmol/l. Hypercholesterolaemia were considered when plasma cholesterol was greater than 5,17 mmol/l, and Hypertriglyceridaemia - triglycerides greater than 1,7 mmol/l (plasma).

Results. 696 patients were admitted during a 6 months period. Newly diagnosed hypertension were n=47(7%), IGT or DM n=58(8%), hypercholesterolaemia n=241 (35%), and hypertriglyceridaemia n=177(25%).

Acute myocardial infarction was present in 91 patients (13%). Most (66%) of them were male. Patients with newly diagnosed one or more RF were 59 (65%), 64% of them were male. Among them for the first time was diagnosed hypertension in n=18 (20%), 83% male; IGT or DM - in n=15 (16%), 47% male; hypercholesterolaemia in n=43 (47%), 61% male; and hypertriglyceridaemia in n=31 (43%), 65% male.



Abbreviations: RF – risk factors; AH – arterial hypertension; IGT – unpaired glucose tolerance; DM – diabetes mellitus; HC – hypercholesterolaemia; HT - hypertriglyceridaemia

Conclusion. Approximately two thirds of the patients, admitted with AMI, had newly diagnosed or untreated RF.

The percentage of patients with AMI and newly diagnosed or untreated AH was three times bigger than the percentage of all admitted patients. For the IGT or DM the percent was approximately two fold increased. Have to pay attention to high level of dislipidaemias – condition, underestimate and undertreated.

The primary prevention of CVD is insufficient. It takes significant a place in the prevention of AMI in particular.

P-02

RISK FACTORS PROFILE OF PATIENTS HOSPITALIZED DUE TO ACUTE CARDIAC EVENTS

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The aim of the study is to examine the frequency of several risk factors of patients hospitalized due to acute cardio-vascular events (complications).

There were investigated 1 244 patients, treated in the Cardiology Clinic of Stara Zagora University Hospital. 588 of them (48.47%) suffer from proven hypertension disease. These patients are at an average age of 63.26 ± 11.79 years (range 17–19 years). The maximum average value of the systolic blood pressure (SBP) is 192.7 ± 31.36 mmHg (range 140–300 mmHg). The maximum average value of the diastolic blood pressure (DBP) is 110.74 ± 16.02 mmHg (range 70–200 mmHg).

The common SBP is $\bar{X}$ 146.32 ± 23.18 mmHg (range 90–250 mmHg), and the DBP is $\bar{X}$ 88.57 ± 14.92 (range 45–2220 mmHg).

The frequency of the diabetes type 2 in the group is 19.73%. Dyslipidaemia has been found with 24.86% of them, and only 14.66% of them control it by a drug treatment. 20.57% of the patients have experienced cardiac incident. The most frequent reason for hospitalization is the cardiac ischaemia, chronic acute cardiac failure have had 43.62 % and acute left-ventricular cardiac failure – 9.45%.

Notwithstanding the specific reason for hospitalization, as a basis in 48.47% of the acute cardiac events brought to hospital treatment, lies the hypertension disease. This circumstance confirms the necessity of an early and systematic control of the arterial hypertension.

P-03

TOBACCO-SMOKING WITH SPECIAL REFERENCE TO PAKISTANI POPULATION

G M Kullo

Chairman, Anti-smoking Campaign Rotary International

Distt.3270 (Pakistan), global doctor,03,2003, by Wonca

The presentation will explain the ways and means of tobacco smoking in general, with Special reference to the Pakistani population, which was involved by the author in conducting Anti-smoking Campaign "through out the world, by means POSTERS models etc etc.

* Means and methods of consuming tobacco as used by Pakistanis:-

These modes and methods of smoking will be displayed by the following ways.

* Various forms of tobacco, both in its original form and mixed up with flavoring agents will be displayed,

* Such as Snuff, in solid state as well as powdered form.

* Cigarettes, cigars, Bedes, paan, pan messala. Hukka (also called seesa), brass model will be on display.

* Posters and banners, of various sizes and colors, printed on paper as well as cloth explaining various ways of consuming tobacco, and its health hazards on various systems of human body will also be explained briefly. CDS will be available and will be used if facilities exist.

* Use of print media, in conducting antismoking campaign, material produced by the author will be displayed and distributed free of charge.

* Booklets, leaflets (besides posters), banners, decorative plates, bearing various antismoking slogans will be displayed in English language will be displayed.

• Some items of daily use, like tea-mats, pencil jars, stickers produced, donated and distributed by the author throughout the world will be available for display and delivery free of charge.

• Use of electronic media, like video-films, CDS, slides, transparencies for projection by overhead projector, will be displayed and even demonstrated if facilities are available at the site.

P-04

DYSLIPIDAEMIAS AS A RISK FACTOR FOR FEMORAL HEAD OSTEONECROSIS

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University hospital "Queen Jovanna"

Department of orthopaedic surgery and traumatology, Sofia, Bulgaria

The authors analyse the lipid status of patients with osteonecrosis. The aim of the study is to determine the ethiologic correlation between dyslipidaemia and femoral head osteonecrosis.

Materials and Methods. The clinical study involved 34 patients with osteonecrosis and reference group of 27 patients with other orthopaedic diseases. In all patients we measured the total cholesterol, triglycerides, LDL and HDL fractions.

Results. The results show a statistically significant elevation of the mean values of the total cholesterol – 5,4 mmol/L triglycerides – 1.78 mmol/L and LDL cholesterol – 3,63 mol/L and low values of HDL cholesterol – 0,91 mmol/L in patient with osteonecrosis compared with the referent group.

Conclusions. Our results show that triglycerides are not a risk factor for femoral head osteonecrosis. There is no correlation between the elevated levels of the total cholesterol (>6,2 mmol/L) and the LDL fraction (>4,1 mmol/L) but there is a significant correlation between the border level and the lower level of the HDL cholesterol (respectively 70,97 % and 61,29%) in the patients with femoral head osteonecrosis.

P-05

DIFFERENT CARDIAC RESPONSE TO ISCHAEMIC INJURY IN NORMOTENSIVE AND HYPERTENSIVE RATS EXPOSED TO SOCIAL STRESS

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Psychosocial stress increases a risk of vascular dysfunction and development of hypertension with a negative impact on the outcome of myocardial ischaemia/reperfusion (I/R) injury. On the other hand, adaptation to various stressful factors is known to modulate cardiac ischaemic tolerance. The study was designed: i. to compare the effect of hypertension and chronic crowding stress on the heart function under normal conditions and ii. to characterize the differences in the response to I/R injury caused by chronic stress in normotensive (WKY) and spontaneously hypertensive (SHR) rats. Crowding stress (S) was induced by caging rats 5 per cage (200 cm²/rat, 8 weeks). Control (C) rats were kept 4 per cage (480 cm²/rat). Neither hypertension nor stress affected parameters of contractile function, however, both factors moderately increased spontaneous heart rate and altered myocardial coronary perfusion evaluated in isolated Langendorff-perfused hearts under baseline conditions. Ischaemic tolerance was tested by subjecting the hearts to test 25-min global ischemia and 40-min reperfusion, when contractile recovery at the end of reperfusion (LVDP, left ventricular developed pressure) and arrhythmias served as end-points of injury. The incidence of lethal (sustained) ventricular fibrillation (SVF; lasting >2 mins) that occurred in none of the hearts from C-WKY group and duration of ventricular tachycardia (VT; 30±12 s) were significantly increased to 25% and 84±22 s, respectively, in C-SHR group (P<0.05) coupled with a lower recovery of LVDP (14.8±6.3% of pre-ischaemic value vs. 60±1.5% in the C-WKY group; P<0.05). In the hearts of normotensive rats, stress led to exacerbation of arrhythmias (SVF 40%, VT 70±20 s) and deteriorated LVDP recovery (33±6.3%; P<0.05 vs. unstressed controls). In contrast, SVF was completely suppressed in S-SHR hearts, in conjunction with shorter episodes of VT (22±5 s; P<0.05 vs. C-SHR) and better recovery of contractile function (LVDP 36.5±11%; P<0.05 vs. C-SHR). Conclusions: neither hypertension nor stress themselves affect heart function substantially under baseline conditions, while tolerance to ischaemia is impaired in hypertensive rats. On the other hand, ischaemic challenge superimposed on the chronic stress represents a higher risk of lethal arrhythmias and contractile failure in normotensive rats indicating a potential development of so-called cross effect of adaptation in hypertensive individuals.

Supported by grants APVT-51-018004 and VEGA SR 2/5110/25.

P-06

OVERWIGHT AND OBESITY AMONG PUPILS - RISK CARDIOVASCULAR FACTORS

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Incidence of overweight among Bulgarian children increases in last 20 years. Epidemiological studies reveal connection between imbalance nutrition, overweight in growing up and numerous cardiovascular diseases. The aim of this study is to assess incidence of overweight and obesity among pupils. Subjects and methods: There is estimated body mass index of 274 boys and 209 girls aged 8 to 15 years, living in Pazardzhik. We used Cole's criteria about classification of overweight and obesity, approved in 2000. Results show overweight in 13,04% and obesity – in 7,04%. To conclude, there are made recommendations concerning nutrition style in childhood and inclusion of physical activity. Incidence of numerous diseases – arterial hypertension, dyslipidemia, diabetes mellitus would reduce in this way.

P-07

DESIRABLE BLOOD PRESSURE TARGET LEVELS IN HYPERTENSIVE PATIENTS WITH OVERWEIGHT

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Aim. The aim of the study was to analyse the target levels used by Bulgarian physicians in the blood pressure control in overweight hypertensive patients.

Populations and methods. In 2005, using a standard questioner, we interrogated 554 general practitioners, 307 out-hospital physicians and 210 in-hospital physicians what were the BP target levels they perceived in overweight hypertensive patients.

Results.

The BP target levels aimed by the GPs were as follow:

BP target	<140/90 mmHg	<130/80 mmHg	<120/80 mmHg
GPs (%)	35,3%	50%	11,4%

The BP target levels aimed by the out-hospital physicians in overweight hypertensive patients were as follow:

BP target	<140/90 mmHg	<130/80 mmHg	<120/80 mmHg
Out-hospital physicians (%)	40,7%	49,7%	6,6%

The BP target levels aimed by the in-hospital physicians in overweight hypertensive patients were as follow:

BP target	<140/90 mmHg	<130/80 mmHg	<120/80 mmHg
In-hospital physicians (%)	33,1%	52,8%	11,4%

Conclusions. Bulgarian physicians recognize overweight, as a risk-factor for coronary artery disease, which requires blood pressure control to the target levels defined for patient with complicated hypertension. Despite this non-inclusion in the risk stratification for primary prevention, over half of them aimed at target levels <130/80mmHg for blood pressure control in this population. There is a tendency to control BP in overweight patients to target levels defined for uncomplicated hypertensive patients. Most of Bulgarian physicians believed that in presence of overweight, risk assessment must be corrected by defining lower target levels for other concomitant risk-factors.

P-08

THE CRITERIA FOR NORMAL WEIGHT, OVERWEIGHT AND OBESITY. KNOWLEDGE OF BULGARIAN PHYSICIANS

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Aim. The aim of the study was to analyze Bulgarian physicians' knowledge of the criteria for normal weight, overweight and obesity.

Materials and methods. In the years 2004-2005, using a standard questionnaire, we interrogated twice (phase 1 – 2004, phase 2 – 2005) out-hospital and in-hospital physicians on their knowledge according to Body-Mass-Index (BMI) criteria.

Results. Most of the physicians are acquainted with the BMI-formula.

BMI formula	Weight (kg) x height (m) ²	Weight (kg)/height (m) ²	height (m) ² /weight (kg)
Physicians			
GPs	11.8%	70.6%	17.5%
Out-hospital specialists	12.5%	77.8%	9.7%
In-hospital specialists	15.3%	72%	12.5%

The definition for normal-weight according the BMI was not well known by most of the physicians included in the two-phases of the study.

Phase 1

BMI	18.5-25.9	19 – 24	21 - 25
GPs	42.7%	46.7%	21%
Out-hospital specialists	39.7%	46.8%	13.5%
In-hospital specialists	34.2%	48.2%	17.5%

phase 2

BMI	18.5-25.9	19 – 24	21 - 25
GPs	40.8%	37%	22.1%
Out-hospital specialists	47.2%	29.6%	23.1%
In-hospital specialists	46.8%	28.1%	25%

About the half of the physicians from the two phases know that if the patient's BMI is >30 he or she is obese. Among them, more than 1/3 of the first-phase and of the second-phase confounded the criteria for overweight and obesity and presumed obesity if the BMI was >25.

Phase 1

BMI	>25	>30	>35
GPs	33.4%	54.1%	12.5%
Out-hospital specialists	39.4%	51.5%	9.1%
In-hospital specialists	41.2%	49.1%	9.6%

Phase 2

BMI	>25	>30	>35
GPs	31.6%	56.5%	11.6%
Out-hospital specialists	37.7%	55.2%	7%
In-hospital specialists	36.8%	54.7%	8.4%

Conclusions. The knowledge of Bulgarian physicians was not satisfactory concerning the classification of the normal weight, overweight and obesity. They knew that obesity is a risk-factor for coronary artery disease, but the poor knowledge and the confusion of criteria for overweight and obesity had an impact on their therapeutic approach in such patients. The lack of continuous medical education on these problems is reflected in the lack of changes and the low level of knowledge during the analyzed period. This was related to the low levels of physicians' activity concerning the management of overweight and obese heart diseased patients.

P-09

IMPROVEMENT OF VASOMOTOR ENDOTHELIAL FUNCTION IN STABLE ANGINA PATIENTS BY HYPOXIA TRAINING

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Vessel endothelium plays an important role in vasomotor tone. Systemic endothelial dysfunction defines coronary artery disease severity, impaired endothelium-dependent vasodilatation worsens with angina pectoris simultaneously.

Aim. the influence of hypoxia training on endothelial vasomotor function of patients (pts) with stable angina pectoris.

Methods. 40 pts with stable angina pectoris FC II-III were included. They were divided into 2 groups by method of chance randomization: I group – 20 pts receiving standardized hypoxia training, II – 20 pts of control group (average age $57,4 \pm 2,88$ and $59,4 \pm 1,83$ years consequently). Drug treatment included β -adrenoblockers, aspirin, nitrates or calcium blockers when needed in both groups. Courses of treatment lasted for 6 months. Endothelial vasomotor function was measured by high-resolution ultrasound (7,5 MHz) according to D. Celermajer (1992). Changes of the brachial artery diameter after reactive hyperemia (RH) were examined (endothelium-dependent vasodilatation), as well as an artery wall sensitivity (according to O. Ivanova, 1997).

Results. There were no changes of the brachial artery diameter after RH in the control group ($9,2 \pm 1,92\%$ initially, $9,5 \pm 1,49\%$ after treatment). The index of the artery wall sensitivity stayed decreased after 6 months cause ($0,32 \pm 0,119$ and $0,43 \pm 0,169$ consequently). Hypoxia training promotes endothelial function improvement. There was an increase of the diameter broadening after RH ($9,6 \pm 1,94$ mm before and $11,8 \pm 0,90$ mm after 6-months treatment) and of artery wall sensitivity normalization ($0,23 \pm 0,08$, $0,55 \pm 0,102$, $p < 0,05$).

Conclusion. Clinical state improvement is connected with endothelial function normalization. The 6-months hypoxia training courses improve endothelial function and increase the effectiveness of treatment of stable angina patients.

P-10

PULSE WAVE SPEED VELOCITY AND ARTERIAL HYPERTENSION

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Aim. To study interrelationship between pulse wave spread velocity and blood pressure (BP) levels, between pulse wave spread velocity and target organ damage.

Material and methods. I-III stage arterial hypertension (AH) patients (141) were investigated (mean age $50,2 \pm 2,7$; 77 men and 64 women). Pulse wave velocity was measured on brachial artery by rheoplethysmography according to original methods. Echocardiography, daily BP monitoring and ultrasonic investigation of brachycephalic arteries was performed by generally accepted methods.

Results. Positive correlation relationship ($p < 0,05$) between pulse wave velocity on brachial artery and mean 24h, mean night and mean daily systolic BP (SBP) and diastolic BP (DBP) level, SBP, DBP pressure load index for 24 hours, for day, for night, night BP decrease degree has been revealed. Positive correlation relationship has also been revealed between pulse wave velocity and pulse arterial pressure. Positive correlation relationship has also been revealed between pulse wave velocity and pulse arterial pressure. Positive correlation relationship ($p < 0,05$) has been revealed between left ventricular myocardial mass, left ventricular myocardial mass index and aortic diameter. Mean daily SBP levels ($83,5 \pm 1,2$ and $89,1 \pm 1,4$ mmHg, correspondingly) and mean 24h DBP levels ($88,1 \pm 1,2$ and $92,9 \pm 1,4$ mmHg correspondingly) as well as left ventricular myocardial mass index ($119 \pm 2,5$ and $138,3 \pm 4,8$ g/m², correspondingly) significantly ($p < 0,05$) differed in patients with normal and elevated pulse wave velocity. Negative ($p < 0,05$) correlation relationship between pulse wave spread on brachial artery and distensibility coefficient for common carotid arteries has been revealed in ultrasonic investigation for brachycephalic arteries. It has been found that changes in elastic properties for common carotid arteries are present in AH patients regardless of the presence of visible atherosclerotic plaques and intima-media complex thickening.

Conclusion. BP level, including the pulse one, influences pulse wave velocity on brachial artery. Pulse wave velocity on brachial artery correlates with target organ damage in AH.

P-11

MODIFIED TREATMENT OF PAROXYSMAL AND PERSISTENT ATRIAL FIBRILLATION

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Background. Ageing of the population has resulted in the growing amount of patients referred to our Unit with atrial fibrillation for cardioversion (CAF). Our strategy to be “as effective as possible” influenced our guidelines for CAF in terms of both: approach to treatment (immediate and aggressive) as well as antithrombotic pretreatment (limited).

Aim. To assess effectiveness and safety of modified approach to CAF.

Clinical data. 100 consecutive pts (age 70.9 ± 12.1 , 32 men) admitted to ICCU for CAF were assessed. 15 pts with 1st PAF, 38 pts with NYHA class CHF II-IV, 21 pts with CCS class IHD II-III, 19 pts with previous MI, 47 pts with WHO class Hypertension II-III, 36 pts with mitral valve incompetence, 3 pts with thyreotoxicosis (present), 10 pts with thyreotoxicosis (past), 6 pts with tachy-brady syndrom, 33 pts on Acenocumarol, 25 pts on Enoxaparine, 70 pts with time from the onset of AF to CAF < 48h, 30 pts with time from the onset of AF to CAF > 48h (or unknown) and with no anticoagulation, 6 pts with time from the onset of AF to CAF > 48h (or unknown) and with no anticoagulation. Pts were followed up for at least 30 days after discharge in order to assess embolic complications.

Results. CAF: spontaneous (6 pts), pharmacological (75 pts), electrical (11 pts), hybrid (8pts), CAF complications (12pts).

Effective CAF (89pts). Ineffective CAF (11pts).

Risk for ineffective CAF (OR) was increased for: pts with NYHA class II-IV (3.2 times, $p < 0.002$), for pts with LVEDD > 52mm (6.4 times, $p < 0.03$), for pts with AF onset to CAF time > 48h (4.2 times, $p < 0.01$), for pts with more than 3 drugs used for CAF (5.1 times, $p < 0.02$).

No significant effect on OR of previous MI, IHD, LA dimension or mitral valve incompetence on risk for ineffective AFC was found.

No significant effect of all mentioned parameters on risk of complications during AFC was found. No embolic episodes during hospitalisation and 30 days follow up were noted.

Conclusions. Our strategy to be “as effective as possible” for CAF appeared to be highly effective and with low rate of complications. No embolic episodes were found regardless no anticoagulation in 6 pts. Ischemic heart disease did not affected adverse prognosis for effective and safe CAF.

P-12

COMMON PROBLEMS IN ELDERLY PATIENTS DURING EARLY POST-SURGICAL REHABILITATION (OVER 75 YEARS OLD)

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In this study, we monitored 34 patients following their cardiosurgical treatments – 30 with CPB and 4 without CPB. The average age of the subjects was 76.6 years. Their age ranged from 75 to 83 years old.

The goal of this study is to examine the complications that occurred during the surgical treatments, as well as the ones that occurred in the early post-surgical rehabilitation. Based on the nature of the subject group, a specialized rehabilitation program was developed that also includes elements of neurological rehabilitation.

We describe in detail the frequency of the complications based on the type of surgical treatment, the presence or lack of CPB and the exit status of the subjects (stroke, peripheral vascular disease, serum creatinine > 130 $\mu\text{mol/l}$, etc). We compare the subjects of our study with a control group of patients under 75 years old, also undergoing rehabilitation in the CRW.

We also examine the change in the functional capacity of the subjects, along with the progress of certain functional parameters, ECG, LV-systolic dysfunction, cardiac volumes, pulmonary and renal dysfunction.

P-13

COMPLICATIONS RELATED TO ACUTE MYOCARDIAL INFARCTION DURING CARDIAC REHABILITATION

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In this study we monitored 115 patients who had suffered acute coronary accident and underwent rehabilitation in CRW in the period 01.01.2005 to 31.12.2005.

There were 95 male and 20 female subjects in the monitored group.

The average age of the subjects was 58.5 ± 17.5 years.

The subjects were in their first to second week after Acute Myocardial Infarction (AMI).

The study was conducted over 10 to 18 days after AMI.

The aim of this study is to examine the type, frequency and severity of complications occurring during cardio rehabilitation in the CRW.

During the monitoring 102 out of 115 subjects suffered complications related to AMI.

In 56 of the 102 cases (approx. 55%), severe complications were registered that affected the progress of the rehabilitation of the subjects significantly.

P-14

EARLY PHYSICALLY ACTIVITY AS A PART OF CARDIAC REHABILITATION TO THE PATIENTS AFTER CARDIAC SURGERY (PARTICIPATION TO THE NURSES IN THAT PHASE)

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Cardiac diseases are of major social significance with high mortality for both women and men in XXI century. Contemporary operative treatment is based on short hospital stay that requires quality of care and appropriate early physical activity with socialization of patients. The nurse is a key figure in the recovery process. There is an evidence that the use of precise created protocols and guidelines results in an excellent outcome for the recovery of patients.

Research aim. To explore the efficacy of working out standardized guidelines for early cardiac rehabilitation.

Materials and methods. On the base of induction of definite guidelines for nurses according to the new-world tendencies for early ambulation, we studied 210 patients hospitalized in Department of cardiac surgery through the first six months of 2006 year.

Patient demographic data

	Women	Men
35 -40 years	8	6
45 -50 years	20	33
55-65 years	33	45
Over 65 years	25	40
Total	210	

Conclusion. Independent of expected alterations in lungs and in functional capacity of patients after cardiac surgery many of them may reach to maximal recovery. The early cardiologic rehabilitation realized on exactly definite guidelines with excellent-educated staff is one of the major conditions for recovering after a cardiac surgery.

Terms of reference: Need to keep on induction of definite guidelines – protocols for nurses according to the new-world tendencies. Need to keep on and to extend education of nurses and their participation with motivation and understanding of the problems of the patients after a cardiac surgery.

P-15

EARLY RESPIRATORY REHABILITATION AS A PART OF CARDIAC REHABILITATION TO THE PATIENTS AFTER CARDIAC SURGERY (PARTICIPATION TO THE NURSES IN THAT PHASE)

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Cardiac diseases are of major social significance with high mortality for both women and men in XXI century. Contemporary operative treatment is based of short hospital stay that requires quality of care and appropriate early physical activity with socialization of patients.

The nurse is a key figure in the recovery process. There is evidence to work on precise created protocols and guidelines to achieve excellent outcome for patients' recovery after heart surgery.

Aim. The aim of the study was to explore the efficacy of working on standardized guidelines for early respiratory rehabilitation as a part of cardiac rehabilitation.

Materials and methods. On the base of induction of definite guidelines for nurses according to the newest world tendencies for early ambulation, we investigated 210 patients hospitalized in Department of cardiac surgery through the first six months of 2006 year.

Results. After a protocol-based respiratori rehabilitation, we achieved the following results:

With bronchial alteration bilateral -1; with hypoventilation to the left side of pulmonary base -1; Atelectasis 63 (Bilateral - 21, to the right side - 12, to the left side -30); with unfurl lungs. The cardiac silhouette without new segmental alterations -144; with tendency to contrariwise progress of atelectasis to the left side -1.

Conclusion. Independent of expected alterations in lungs and in functional capacity of patients after cardiac surgery many of them may reach to maximal recovery. The early cardiologic rehabilitation realized on exactly definite guidelines with excellent-educated staff is one of the major conditions for recovering after cardiac surgery.

P-16

COMPARATIVE EFFECTS OF BETA-BLOCKERS ON CHRONIC HEART FAILURE WITH DUE CONSIDERATION TO THE ENDOTHELIAL DYSFUNCTION

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Aim. To study the influence of different beta-blockers (BB) on endothelial dysfunction (ED) and left ventricular remodeling ones in CHD pts complicated by CHF and to develop differentiated approaches to their administration.

Methods. 76 CHD pts with postinfarctive sclerosis, CHF II-IV were surveyed. EchoCG, bicycle test, brachial artery dopplergraphy were performed. Biochemistry: determination for cell activity of leukocyte system, myeloperoxidase activity, the level of final products of NO metabolism in urine, blood. Bisoprolol versus nebivolol was administered 3 months.

Results. Changes in biochemical indices indicates: three mechanisms for the ED development which accompanies CHF progression. 1. Expressed endothelial damage in severe CHF with sharp reduction in NO production. 2. ED connected with moderate reduction in NO production and more favorable evolution of CHF. 3. ED with NO hyperproduction and moderately expressed CHF. The effectiveness of different BB in grs was assessed and their effectiveness with due consideration to the degree and nature of ED was assessed. Bisoprolol was more effective in 1 gr as more expressed improvement in intracardiac haemodynamics (IH), in endothelium dependent vasodilatation and in biochemical indices occurred. Left ventricular function improved: end diastolic diameter decreased from $67,5 \pm 5$ mm to $59,8 \pm 7$ mm, end systolic diameter from $49,2 \pm 4,2$ mm to $41,7 \pm 3,7$ mm, EF increased from $39,1 \pm 6$ % to $48,2 \pm 5$ % ($p < 0,02$). Brachial artery blood flow was initially decreased. The result of the therapy: Vmean $0,6 \pm 0,2$ m/s, arterial spectrum velocity change increased $29,3 \pm 4,6$ %, diameter reaction in brachial artery $23 \pm 3,6$ %. 2 gr: nebivolol appeared to be more effective which was evidenced by IH improvement and normalized NO level. As regards the 3 gr: bisoprolol appeared to be more effective according to all performed investigations. Bisoprolol did not decrease NO level in blood plasma.

Conclusions. CHF progression is the result of sharp reduction in NO production, at the same time, NO deficit is directly proportional to HF severity degree (the higher the functional class, the more expressed the endothelial dysfunction, connected with nitric oxide deficit, is). Bisoprolol was more effective in 1 and 3 grs, associated with the more severe CHF than 2 gr pts were treated with nebivolol. That's way BB therapy for the CHF must be differentiated and must depend upon the degree and nature of ED as there are different directions in endothelial function changes when CHF occurs.

P-17

24 HOURS ACTIVITY OF BISOPROLOL AND METOPROLOL TARTARAT: PREVIOUS RESULTS

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In our site, beta-blockers have the quickest increasing effective part of all medicines for essential hypertension treatment. The most practical of them is Metoprolol. Bisoprolol is the other beta-blocker, that appear on the market for a short time. The reason was low frequency of adverse events, conditioned of its high beta 1 selectivity which was supposed reason of its wide use. We are missing a vast number of researches on the treatment of arterial hypertension, in order to compare and to assess efficacy of both beta-blockers with ambulatory blood pressure monitoring.

Aim. The aim of this research is to compare efficacy of equivalent doses original Bisoprolol (Concor) and Methoprolol tartarat at patients with mild activities of the blood pressure was moderate of arterial hypertension with ambulatory blood pressure monitoring for 24 hours.

Methods. The research is open, cross and prospective. Seventy one patients with mild to moderate arterial hypertension (AH) (45 males- 63% , main age 47.9 ± 79.5 ; office measured blood pressure: systolic/diastolic - $5/D$ $152.7 \pm 12.3/99.1 \pm 6.9$; hart rate - HR 87.5 ± 7.9) were investigated. To all patients a blood pressure monitoring was made in an outpatient department initially and six months after. Patients were treated by Metoprolol tartarat 100mg. and Bisoprolol 10mg. The following parameters were analyzed: 24 hours systolic blood pressure, diastolic blood pressure, pulse pressure, heart rate for 24 hours and main blood pressure and heart rate profile.

Results. Both beta blockers did not affect BP circadian rhythm, but they made it significantly reduced in comparison with the basal treatment (ABPM, $p < 0.001$). Through a whole hour, the value of systolic blood pressure ($p < 0.001$) and diastolic blood pressure ($p < 0.001$) after Bisoprolol treatment were significantly lower than the initials values. At the tenth and the eleventh hour after Metoprolol treatment, in the mean hour BP (139.7 ± 11.8 , respectively 138.5 ± 11.8 mm Hg) and in the main hour DBP at the eleventh hour (83.3 ± 9.2 mm Hg) was not found significant difference of the basic pressure respectively (147.3 ± 14.8 , 145.8 ± 14.6 and 90.3 ± 11.4 mm Hg). After a treatment with both beta-blockers the values BP were significantly reduced under the initial values. Treatment with Bisoprolol made bigger reduction in 24 hours SBP and DBP in comparison with Metoprolol (123.0 ± 7.6 resp. 125.9 ± 7.0 and 72.9 ± 5.2 resp. 75.4 ± 5.3 mm Hg). The number of patients treated with Metoprolol and Bisoprolol reached 24 h DBP < 80 mm Hg was the same – 60 (84%) with the two medicines.

Conclusions. Bisoprolol has an expressive antihypertensive effect at tested equivalent dosage with once a day treatment, in comparison with Metoprolol treatment twice a day.

Clinical used. We know that simplified, once-a-day treatment is precondition for improvement of the patient compliance and has more optimal BP control. Bisoprolol (Concor) is the medicine for arterial hypertension treatment with optimal control. It is the medicine used for first choice of BP treatment and can be a sure BP reducer for a 24-hours period.

P-18

TREATMENT WITH CONCOR (BISOPROLOL) IN PATIENTS WITH ARTERIAL HYPERTENSION AND METABOLIC SYNDROME.

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Objective of this study was to assess the efficacy and tolerance effects of cardioselective beta-blocker Bisoprolol (Concor) on blood pressure and insulin sensitivity in patients with essential hypertension and metabolic syndrome. The observation was done for a period of 2 months.

Methods. Twenty patients (16 females and 4 males), average age 46.9 ± 9 , with both mild to moderate essential hypertension and metabolic syndrome were investigated. Fourteen patients had normal glucose tolerance, one had abnormal glucose tolerance and 5 were with diabetes mellitus type 2. All patients had increased waist circumference with an average body mass index (BMI) of 34.6 ± 3.06 . The study was done in an outpatient department. Patients were treated with 5 mg of Concor and blood pressure was monitored over 24 hours with Hg sphygmomanometer. The following parameters were measured: weight, body mass index, waist circumference, serum glucose, HDL, LDL and VLDL and insulin resistance.

Results. Results showed a significant reduction of systolic and diastolic blood pressure measured manually. Significant reduction of mean 24 hour, daily and night blood pressure was observed. The heart rate became stable between 60-70 per minute. There was a significant decrease of fasting insulin plasma levels and NOMA index. Serum triglyceride levels did not show any significant changes. There were no statistically significant changes in the levels of serum cholesterol and its fractions. The medication was tolerated well without side effects.

Conclusions. Our results showed that Bisoprolol (Concor) has a high efficacy and tolerability in multidrug therapy of patients with essential hypertension and metabolic syndrome.

P-19

BULGARIAN PHYSICIANS' CHOICE OF DRUG THERAPY IN PATIENTS WITH STABLE ANGINA

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Objectives. The aim of this study was to analyze the approach of Bulgarian physicians to choose the drug therapy in patients with stable angina (SA) and to determine their preferences for the most effective antiischemic therapy.

Design and methods. Using a standard questionnaire we inquired: 1) 601 general practitioners (GPs) taking care of 728 596 individuals above 18 years old; 46 657 of them were patients (pts) with coronary heart disease, including 26 016 patients with SA; 2) 109 outhospital cardiologists (Cardio), taking care of 20 444 SA pts; 3) 91 inhospital cardiologists (inh-cardio). We analyzed the choice of initial therapy and the use rate of beta-blockers (BB), antiplatelet agents (AA), nitrates (N), calcium channel blockers (CCB), ACE-inhibitors (ACEi), statins (S) and trimetazidine (Pr).

Results.

1) Beta-blockers, antiplatelet agents and nitrates were the drug classes of the first choice in the GPs' therapeutic schemes. We found that 3.3 drugs were used per pt. The frequency of the used drugs was as follows: antiplatelet agents – 63%, beta-blockers – 77%, calcium channel blockers – 19%, ACE-inhibitors – 32%, statins – 13%, nitrates – 69%, trimetazidine – 59%. GPs considered beta-blockers to be the most appropriate drug class for SA treatment, followed by trimetazidine, nitrates and antiplatelet agents. Our data pointed out the following results: antiplatelet agents – 12%, beta-blockers – 29%, calcium channel blockers – 3%, ACE-inhibitors – 6%, statins – 2%, N – 21%, trimetazidine – 26%.

2) Beta-blockers, AA and N were the drug classes of the first choice in the Cardio' therapeutic schemes. We found that 3.5 drugs were used per pt. The frequency of the used drugs was as follows: antiplatelet agents – 70%, BB–89%, calcium channel blockers – 20%, ACE-inhibitors – 35%, S–31%, N–71%, trimetazidine – 51%. Cardio considered BB to be the most appropriate drug class for SA treatment, followed by N, Pr and antiplatelet agents. Our data pointed out the following results: antiplatelet agents –11%, BB–38%, calcium channel blockers – 2%, ACE-inhibitors – 9%, statins – 4%, N–20%, trimetazidine – 15%.

3) Beta-blockers, antiplatelet agents and N were the drug classes of the first choice in the inh-cardio' therapeutic schemes. We found that 4 drugs were used per pt. The frequency of the used drugs was as follows: antiplatelet agents – 81%, beta-blockers – 96%, calcium channel blockers – 20%, ACE-inhibitors – 43%, statins – 41%, N–73%, trimetazidine – 54%. Inh-cardio considered BB to be the most appropriate drug class for SA treatment, followed by N, antiplatelet agents and Pr. Our data pointed out the following results: antiplatelet agents – 13%, BB–45%, calcium channel blockers – 2%, ACE-inhibitors – 7%, statins – 4%, N–18%, trimetazidine – 11%.

Conclusions. Bulgarian physicians treated SA according to the international and national guidelines instead of some detail differences. Beta-blockers, antiplatelet agents and N were the most frequently used drug classes. Beta-blockers were the preferred antiischemic drug class. Despite the relatively high percentage of antiplatelet agents prescriptions (63-81%), we considered their use to be inadequate at the moment. The relative part of S use was also insignificant. In contrast to the ESC guidelines trimetazidine was included in the initial SA therapy scheme and in some cases it was used as monotherapy. Bulgarian physicians preferred the drugs with a tangible antiischemic effect, while the drugs that did not relieve symptoms but prolong the life expectancy represented insignificant part of the therapy.

P-20

POSSIBILITIES FOR TREATMENT OF SECONDARY PULMONARY HYPERTENSION IN PATIENTS WITH CHD COMPLICATED BY SEVERE CHRONIC HEART FAILURE

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Methods. 135 CHD pts and postinfarctive sclerosis, severe CHF III-IV and secondary pulmonary hypertension (PH) were surveyed. EchoCG, bicycle test, brachial artery dopplergraphy were performed. Biochemistry: determination for cell activity of leukocyte system, myeloperoxidase activity, the level of final products of NO metabolism

in urine, blood. 1 gr nebivolol, 2 gr – bisoprolol, 3 gr – eprosartan and bisoprolol was administered 6 months (m). This treatment was performed at the background of traditional therapy: ACE inhibitors (i); if required: BAB+ACEi +diuretics+glycosides.

Results. indices, characterizing systolic and diastolic function of LV, improved significantly in 1 gr: end diastolic and systolic diameter, end diastolic and systolic volume; LVEF increased, that is, nebivolol improves significantly a number of the important haemodynamic indices in CHD pts with CHF complicated by secondary pulmonary hypertension. Improved tolerance to physical exercise and life quality were noted. Pulmonary artery systolic pressure (PASP) as to this gr constituted $42,17 \pm 5,1$ mmHg. Statistically significant decrease in PASP in the moderate PH subgroup by the end of the second m. to $36,4 \pm 9,7$ mmHg ($p=0,002$) was noted; this index constituted $31,7 \pm 8,4$ ($p=0,002$) by the end of six m. Endothelial function improvement was noted according to brachial artery dopplergraphy as well as according to biochemical indices. Improvements in intracardiac haemodynamics and endothelial function were noted in the 2 gr in the similar fashion. Expressed and significant decrease in PASP was observed in pts with moderate PH (from $40,4 \pm 3,1$ to $28,5 \pm 8,5$ mmHg) ($p=0,000$); in the subgroup with expressed increase in PASP, only a tendency to decrease in secondary PH was noted. 3 gr - initially 78% pts had expressed PH $48 \pm 7,7$ mmHg. By the end of the second month, dynamics in PASP to $41 \pm 7,1$ mmHg ($p=0,049$) was noted; by the end of the sixth m, this index constituted $32,7 \pm 5,6$ mmHg ($p=0,027$). A significant decrease in PASP was observed in pts with CHF complicated by moderate PH (from $41,4 \pm 2,1$ mmHg up to $29,7 \pm 8,5$ mmHg ($p=0,032$)); as well as in the subgroup with expressed increase in PASP (from $52,4 \pm 3,1$ mmHg to $37,6 \pm 4,5$ mmHg ($p=0,04$)).

Conclusions. If ACE inhibitors and BAB for treatment of CHF with secondary PH are used without effect, eprosartan can be used for decrease in PASP as a part of comprehensive therapy for CHF. The important circumstance is that comprehensive therapy with bisoprolol and eprosartan is effective in pts with CHF III-IV FC and with moderate and, what is particularly essential, with expressed pulmonary hypertension.

P-21

IS THERE POTENTIAL TO POSTPONE PCI PROCEDURES IN PATIENTS WITH ISCHEMIC HEART DISEASE IN BULGARIA?

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Aim. To analyze the risk factors of the Bulgarian patients who experienced percutaneous coronary intervention (PCI) and to see if their modification has a potential to postpone PCI procedures.

Material and methods. Three hundred and eighteen consecutive patients who experienced PCI in the angiographic department of the University Hospital in Varna, Bulgaria, since January 2003 until May 2006, were included in the study. The group consisted of 240 males and 78 females, at average age of $57 \pm 9,6$ (from 33 to 82 years), and 78 patients were over 65 years of age. Data for the patients' risk factors were obtained retrospectively in two ways: from the medical records and from telephone calls with the patients. The collected data were compared with data from another study of 409 patients with PCI in the University Hospital in Janina, North-west Greece.

Results. The investigated group had lower mean age than the compared one ($57 \pm 9,6$ vs. $60,9 \pm 9,9$, $p<0,0005$), significantly smaller number of patients over 65 years (24,5% vs.36%, $p<0,0005$) and a larger portion of females (24,5% vs. 15%, $p<0,001$). Both groups had not significant differences for the following risk factors: smoking (54,7% vs. 54%), dyslipidaemia (66% vs. 62%), diabetes mellitus (22,3% vs. 27%) and family history for cardiovascular diseases (33,9% vs. 35%). Our group showed prevalence in the frequency of arterial hypertension (93,7% vs. 56%, $p<0,0005$), the number of the patients who experienced myocardial infarction (71.7% vs. 37%, $p<0,0005$) and patients with EF below 50% (28% vs. 19%, $p<0,0025$). Also the number of patients with acute myocardial infarction was significantly lower (8,2% vs. 20%, $p<0,0005$).

Conclusions. The patients with coronary artery disease, who experienced PCI in the University Hospital in Varna, Bulgaria, had a bad risk profile. It was similar to the profile of patients in a neighbouring Balkan country, but with a significantly lower average age of the patients and higher frequency of arterial hypertension. Often there was combination of some poorly controlled risk factors. More of the patients were hospitalized for PCI late, after experienced myocardial infarction, with low EF and symptoms of heart failure. We found these negative results during the four years of follow up and explained them with the lack of prophylactic interventions in the outpatient clinical practice. It is logic that modification of this bad risk factors background will postpone PCI procedures and this we shall try to prove in further investigations.

