

NEWS LETTER

Egyptian Hypertension Society



الجمعية المصرية لإرتفاع ضغط الدم

Volume 10

October 2005

ISSUE NO. 4

THE PRESIDENT'S MESSAGE

THE EGYPTIAN CARDIOVASCULAR PREVENTION PROGRAM

This year, the Egyptian Hypertension Society is taking the initiative to organize a multi component cardiovascular prevention program. The program was made possible through the contribution of Egyptian drug industry, namely "sanofi-aventis". The name of the prevention program is Delta-C. "Delta" is standing for change and "C" for cardiovascular. It is expected that the program duration will be four years. The goal of Delta-C project is to improve the wellbeing of Egyptian people and to reduce death and disability related to cardiovascular risk factors. The goal can be achieved by identifying the best ways of enabling people to lower their risk of cardiovascular disease.

Increasing Importance of Atherosclerotic Cardiovascular Disease

In the past decades, atherosclerotic cardiovascular diseases have emerged as the leading cause of morbidity and mortality in many parts of the world. Globally, the two leading causes of death are coronary heart disease and stroke being responsible for more than 13 million deaths. The pattern will probably be unchanged in 2020, with coronary heart disease and stroke remaining the two leading causes of death and of disability. Cardiovascular disease is not just a disease of developed economies; it is also becoming pandemic in developing countries. The increasing incidence of atherosclerotic cardiovascular disease in the developing countries is due to a number of factors including increase in average life expectancy, urbanization and high risk factors levels (such as obesity, diabetes, dyslipidemia, hypertension and cigarette smoking). The increase in average life expectancy following control of infections and nutritional disorders and improvement of health care results in aging of the population. This has been observed in industrial and third world countries. In Egypt, the life expectancy has increased by more than 30% in the past four decades. Aging is associated with increasing rates of hypertension, diabetes and atherosclerotic vascular disease.

The current inappropriate diet and physical inactivity resulting in unfavorable plasma lipid profile, obesity and raised blood pressure contribute to atherosclerotic cardiovascular disease epidemic. These factors together with tobacco use were shown to explain at least 75% of new cases of cardiovascular disease. Death, myocardial infarction and stroke frequently occur suddenly and before medical care is available, and many therapeutic interventions are therefore inapplicable or palliative.

Feasibility of Prevention

The mass occurrence of cardiovascular disease relates strongly to life styles and modifiable physiological risk factors. Risk factors modifications have been shown to reduce mortality and morbidity.

A THERAPEUTIC DILEMMA

Many now view that drugs presumed to be of the same class could not be used any more interchangeably on the assumption of an exiting "class effect" in an era of evidence-based medicine!!! They argued that criteria for identifying this with certainty should be very strict, particularly when few compounds within specific drug classes truly share the same structure, pharmacology, mode of action, efficacy or safety. Accordingly, the tendency to extrapolate a single drug efficacy to a "class effect" is now being debated in most national and international CV meetings whenever being confronted with drugs that share "a common presumed pharmacologic target." It's a real dilemma that awaits a unified consensus.

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→Cont→

Cardiovascular mortality could be reduced by 60% through continued reduction of established personal risks and habits such as cigarette smoking, high blood cholesterol, and physical inactivity. Cigarette smoking alone doubles the risk of heart disease. Persons with uncontrolled hypertension have three to four times the risk of developing cardiovascular heart disease as do individuals with controlled or normal blood pressure. All these risk factors are modifiable and are amenable to correction. Furthermore, there is substantial evidence that lowering total cholesterol or low density LDL-C levels will decrease the incidence of coronary heart disease.

The US NHBPEP model has shown that cardiovascular risk factors can be modified and that these changes are associated with reduction in coronary heart disease and stroke deaths.

Egypt has had successful public education campaigns with childhood hydration program, and childhood vaccination programs which have reduced infant mortality and there is every reason to expect that the Delta-C project will be equally successful in reducing death and disability in Egypt. The following table shows the contribution of risk factors changes in prevention of deaths in England and Wales.

Table: Deaths Prevented or Postponed as a Result of Population Risk Factor Changes in England and Wales 1981-2000

Risk Factor	(%) Change in Risk Factor 1981-2000	Proportion of Overall Deaths Prevented or postponed,%
Smoking	-34.0	48.1
Population blood pressure	-7.7	9.5
Cholesterol	-4.2	9.6
Physical activity	-30.6	-4.3
Obesity	+186.2	-3.4
Diabetes	+65.6	-4.7
Total risk factor effects	-----	58.2

Source: Unal B et al. *Circulation* 2004; 109:1101

Need for a Comprehensive Prevention Program

A multicomponent cardiovascular prevention program is needed in order to halt the epidemic of atherosclerotic cardiovascular disease in Egypt. The program should develop a written document outlining guidelines for prevention of atherosclerotic cardiovascular disease in Egypt and developing countries. The Egyptian guidelines will tailor the available recently published international guidelines to demographic, cultural, social and economic Egyptian profile. Guidelines are of limited or no value unless they are implemented in the community. The current project includes physician and public education components aiming at increasing the medical community and the population awareness of cardiovascular risk factors and the approaches for prevention and control. The validity of the education program will be tested in a separate component of an interventional longitudinal study. The study will examine the role of both guidelines and their implementation in improving the cardiovascular risk profile in a number of patients.

M. Mohsen Ibrahim, M.D.

Prof. of Cardiovascular Medicine – Cairo University.
President of The Egyptian Hypertension Society.

TURNING CONCEPTS

LOOKING BEYOND THE 'CUT-OFF POINTS' OF BP

The *Writing Group of the American Society of Hypertension* emphasized on expanding the definition and classification of hypertension in their annual conference last May.

Thus, the stage 'prehypertension' was removed: **Stage 1:** is roughly equivalent to the previously designated prehypertension, **Stage 2:** is equivalent to JNC7 Stage 1, and **Stage 3:** the most severe hypertension, roughly equates to JNC7 Stage 2.

Not only that, but the definition encompassed the presence or absence of **hypertension-associated risk factors** [such as age, sex, lipid levels, body mass index, smoking, and family history of disease], **early disease markers** [exaggerated BP responses to exercise or mental stress, micro-albuminuria, or impaired glucose tolerance] and **target organ damage** [measurable in the heart, arteries, kidneys, and eyes], at any given BP level.

The main aim of these changes was to urge physicians to look at the overall CV risk rather than a patient's BP level in isolation, specially that more than 80% of hypertensive patients have an additional co-morbidity, while more than 50% have two. Not only this, but individuals with relatively low BP levels who are designated 'prehypertensive' and therefore not yet being treated -according to JNC7 recommendations would, according to the new definition, be identified as normotensive if they had no risk factors and as hypertensive if they exhibited any risk factor that a physician should "really go after" and try to therapeutically modify by treatment. For example, this implies to those with a positive family history of hypertension that unravel a tendency for increased insulin levels, increased renin and sympathetic nervous system values, abnormal lipid levels, arterial stiffness, changes in LVF, and endothelial dysfunction, that should all be respectively targeted to delay progression to hypertension. Age should also be considered, as a man in his 40s with an SBP of 120 mmHg has an approximately 10-fold lower risk than someone 30 years older with the same SBP value, emphasizing on the use of statins, high-density lipoprotein mimetics, and calcium channel blockers with intensions of halting the arterial disease progression.....etc. The rational behind all that is to address CV risks global, beyond just looking at cut-off points, so as to minimize morbidity and mortality outcomes of such a continuous variable as: "Hypertension".

Conference coverage of ASH Annual Meeting-San Francisco, May 2005 *InCirculation.net*

RESEARCH CORNER

DETECTING NON-COMPLIANCE

A Canadian research emphasized on the need of short questionnaires to identify non-compliant hypertensive patients in a non-threatening, compassionate manner that should not embarrass the patient through the admittance that he/she ignored the health-care provider's instructions. This is because a noncompliant, apart from displaying worse health outcomes, is also wasting precious healthcare resources.

J Hypertens 2005; 23: 1261-1266

THE PSYCHOSOCIAL FACET OF METABOLIC SYNDROME.

A Danish study, highlighted the existence of a strong inverse social gradient in the prevalence of the metabolic syndrome [increased waist circumference, hypertriglyceridemia, decreased HDL, hypertension &/or hyperglycaemia...]. The lower levels of education contributed and among the psychosocial factors evaluated [depression & fatigue; perceived stress; social network; and cohabitation] only the men with smaller social networks were the ones with correlative psychosocial stresses.

Conference coverage of ESC in Stockholm, Sweden September 6, 2005 InCirculation.net.

BP DIFFERENTIALLY AFFECTS HEMORRHAGIC-STROKE SUBTYPES

A Korean survey, running for a follow-up period of 10 years highlighted that high BP is more closely related to haemorrhagic rather than ischaemic stroke. Of this, BP is of more stronger link to intracerebral hemorrhage than subarachnoid hemorrhage. This is of utmost importance in making therapeutic choices.

Hyperten. 2005 (July) early on line publication.

A LIFE-STYLE MODIFICATION

A Chinese trial cleared, that soybean protein supplementation induced a consistent BP reductions whether in men, women, younger, older, obese or normal weight participants in comparison to most other currently recommended lifestyle modification interventions as the "DASH diet". This should be more confirmed and quantified before vigorously promoting increased soy protein intake, which has already been recommended on the basis of its modest LDL-lowering effect

Ann Intern Med 2005; 143: 1-9.

MOLECULAR REASONINGS;

MORE SECRETES AS TO HOW RAS BLOCKADE PREVENT DIABETES; THE ADIPOGENIC SWITCH

Omnia Nayel, Ph.D. Prof, Pharmacol, Alex. University, Editor of EHS Newsletter.

Over the last decay, many clinical trials agreed that RAS blockade can delay the onset of diabetes mellitus (DM) whether in those receiving ACE inhibitors [HOPE, CAPP, STOP-2, ALLHAT, D SOLVED, INVEST trials] or ARBs [SCOPE, LIFE, CHARM, ALPINE, VALUE trials], though reasons for this at the start were not fully clear. This tempted researchers to probe in the underlying mechanisms and they succeeded to unravel several possible ways. Some mechanisms were linked to the ability of RAS blockade to improve insulin sensitivity on target organs especially on skeletal muscles (sk.m.) by activating post-receptor insulin signaling via IRS-1/PI₃-K/Akt pathway. This has two merits a) the evoke of NO production that will increase vaso-permeability and allow the macromolecular extravasation of glucose – b) the activation and mobilization of glucose transporters allowing its intracellular utilization. On pancreatic level, other mechanisms cleared a role for RAS blockade in activation of NO there, which will facilitate glucose-increased Ca oscillation and insulin secretion aside activation of the Akt survival pathway which will prevent β -cell apoptosis i.e RAS blockade is insulinotropic.

Lately, a newly discovered mechanism explains how, the fat balloons the small metabolically active visceral adipocytes, turning them into large insulin-resistant subsets that secrete excess FFA & many adipocytokines [leptin, resistin, TNF- α , IL-6, TGF- β , PIA-1, Ag II (via AT₁),...] which will all suppress post-receptor insulin signaling and prevent adipocyte differentiation i.e. **ADIPOSTASIS**. This situation will enhance ectopic lipid deposition in sk.m., myocytes ...etc., thus aggravating insulin resistance and permitting its progression to DM. Interestingly, blocking RAS system will switch the balance towards **ADIPOGENESIS** particularly by ARBs. This latter, will permit Ag II (via AT₂) to enhance more & more preadipocyte differentiation into a new generation of small insulin-sensitive adipocytes capable of fat storage. This is simply what insulin sensitizers are doing [rosiglitazone & pioglitazone] via PPAR- γ activation which too promote the same pathways of pre-adipocyte differentiation and adipogenesis. This new finding adds more to our understanding of how such antihypertensives prevent the development of DM.

Hypertension 2000;35:1270 - Endocrinol 2003;140:1154 - Hypertension 2004, 43: 1003- Circulation 2004: 109;2054 - Med Hypoth 2005; 64 ; 476 - Am J Physiol Endocrinol Metab 2005;288:E1074 - Hypertension 2005,45:June

DIAGNOSTIC CONSIDERATIONS;

MASS: A SCREENING TOOL FOR DIAGNOSIS OF STROKE.

Because stroke, is one of the most debilitating morbid outcomes of hypertension, a reliable validated stroke assessment tool, to be used by paramedics, for stroke identification and diagnosis, is always sought. The existing, Los Angeles Prehospital Stroke Screen (LAPSS) and Cincinnati Prehospital Stroke Scale (CPSS), - show good specificity and sensitivity, respectively and are quick and simple to perform. Yet, since they have many similarities, combining certain elements of the two tools into one would incorporate the strengths of both, thereby providing a more accurate overall stroke diagnosis, currently termed the Melbourne Ambulance Stroke Screen (MASS). This new screening tool when tested over 12 months, had a sensitivity of 90%, matching CPSS but superior to LAPSS and a specificity similar to LAPSS, but better than CPSS. In this way, it helped paramedics to reduce prehospital and in-hospital delays and furthermore assisted in the selection of those suitable for thrombolysis.

Cerebrovasc Dis 2005; 20: 28-33



* **CAMELOT: Poses a BP strategy in CAD patients:** The rationale in the Comparison of Amlodipine versus Enalapril to Limit Ischemic Occurrences of Thrombosis (CAMELOT) trial was based on evidence that levels of SBP previously considered normal confer an increased risk of CAD. The design is double blind on 2000 patients [with angiographically documented CAD and SBP levels ≤ 140 mmHg.] receiving amlodipine 10mg, enalapril 20mg, or placebo for 1 year, on background of statins, aspirin, and β-blockers therapy. Results showed that the two treatment groups experienced similar BP reductions but comparatively a 19% (p=0.1) reduction in CV event rate was achieved by amlodipine versus enalapril. This benefit being driven by a significant reductions in time to hospitalization for angina (42%, p=0.02), and time to coronary revascularization (27%, p=0.03). A further substudy [300 patients], focused on atheroma volume changes from baseline, whereby a trend towards reduced progression with amlodipine was seen compared to placebo, and appeared significant only in those with above-average SBP levels, denoting that antihypertensive therapies in the setting of normal BP can be very effective in preventing CAD.

* **AVALON-AWC: Compares vascular compliance by a statin, a CCB or both,** employing wave-form technology to track the diastolic decay curve and detect oscillations that are indicative of artery elasticity at 4-weekly intervals for 8 weeks. In comparison to placebo, atorvastatin and amlodipine rather than each alone significantly improved small arterial compliance [(p<0.0001) caused by 19.6% change from baseline] a finding that was sustained over 28 weeks. Such benefit is linked to the increased NO bioactivity achieved differently by each drug, posing a combined improvement on endothelial function, which is the hallmark of small artery compliance. This accounts why these drugs have favorable effects on outcomes.

Read more →Conference coverage of AHS Annual Meeting-San Francisco, May 2005. InCirculation.net



* Prof. Dr. M. Ibrahim the president of EHS discussed Physicians Knowledge and Attitudes about: Hypertension in Middle Eastern Countries within the Newsletter of the World Hypertension League (WHL), Vol No. 102, August 2005.

* The 5th Pan Arab Hypertension Society was organized by Prof. Adel Kheder and his Tunisian team during 14-17th of September at Abou Nawas Hotel – Tunis. This Pan Arab gathering, intended to fulfil the goals of the society, namely education, encouragement of scientific research and establishment of human relations between different Arab scientists and doctors. The conference addressed several critical topics related to the varied CV risk factors in the Arab world. It also focused on hypertension in special ethnic and disease states.

* The Egyptian Hypertension Society CV Protection Forum, in collaboration with Servier held this month a meeting at Conard Hotel – Cairo during Ramadan Sohour. The meeting centered on the latest benefits in RAS inhibition whether in hypertension, kidney disease or HF. The results of ASCOT Trial-were also appraised.



CALENDAR:

LOCAL MEETINGS		
33 rd Annual Meeting of the Egyptian Society of Cardiology	Intercontinental Heliopolis Hotel, Cairo, Egypt. 21-24 February 2006	Secretary: Mrs. Fathia Al-Said Tel (202) 33 81 308-Fax (202) 33 81 309 Mobile: 010 177 31 04
10 th Annual Meeting of EHS & WHL Regional Meeting	Marriot Hotel, Cairo, Egypt. 5-7 th April 2006.	Secretary; Mrs. Rehab Mohamed Tel (202) 794-8877 - Fax (202) 794-8879 Website: www.ehs-egypt.net
INTERNATIONAL MEETINGS		
77 th Scientific Sessions of the American Heart Association	November 13–16, 2005 Dallas, TX, USA	7272 Greenville Avenue - Dallas, TX 75231, USA Fax: (+1-214) 706 5262 E-mail: session@heart.org

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