Importance of Check Up Evaluation in Clinically Healthy 40-65 Age Group, in Albania

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**Introduction**: Assessment of glycaemia, lipid profile and status of stress-anxiety-depression in clinically healthy individuals, through the foregoing examination, is very important for preventive medical decision and slowing down atherosclerotic and cardiovascular events. **Aim.:** Importance of atherosclerotic risk, Framingham score, evaluation of stress-anxiety-depression, glycaemia, in clinical healthy age group 40-65 year old. **Material and Methods**: Were analysed data of 100 individuals of Health Center Nr 4, Tirana, Albania, who had been subjects of the programmed preceding control. We analysed variation of values of glycaemic, lipids profile, measured by end point method, and stress-anxiety-depression status according to DHQ 9 questionnaires in these patients. We've calculated risk for atherosclerosis and likelihood for cardiovascular events during the next 10 years according to the Framingham criteria. We've calculate percentage of suggested diabetic and metabolic syndrome cases. **Results.:** We've seen these variation of values: glycaemia (GLU) = 96.2 ± 37.8mg/dl; cholesterolemia (Chol) = 215 ± 35.7mg/dl, HDL-cholesterolemia(HDL-ch) = 43.3 ± 14.7mg/dl, LDL-cholesterolemia(LDL-ch) = 131 ± 32.8mg/dl, the level of stress = 6.76 ± 5.92, the atherosclerotic risk :(AR) men = 6.93 ± 2.47 and (AR) woman 5.08 ±1.25 (p = 0.0003); Framingham scoring(%) Male(M) = 12.8 ± 7:49; Female(F) = 2:59 ± 2:01 (p = 0.0001) **Conclusions**: Statistical significant difference of AR (p = 0.0003) or scoring Framingham (p = 0.0001), between genders, in our age group is consistent with literature data, where to be female aged> 55 years old is considered a major factor risk for cardiovascular events, whereas for men this age is > 45 years old. Although early new markers are very important and promising, assessment of glycaemic, lipid profile or anxiety-depression stress status, are determinant nowadays for the best medical decision to slow down atherosclerosis progress in this age group.

Keywords: Framingham criteria, prevention, check up, atherosclerotic risk, metabolic syndrome

1. Introduction

1.1 Atherosclerotic risk status and importance of check up evaluation at our age group

One of the main causes of cardiovascular disease of coronary vessels (angina pectoris, myocardial infarct) are atherosclerotic events. These lesion progresses when happened a continuouss disbalanced interaction between antiatherosclerotic and proatherosclerotic factors in favor of the latter.(7)

Therefore recognition and consideration of detailed and underlying mechanisms that accelerate or slow down atherosclerosis, leads us in undertaking preventive attitudes towards it. (1,2,3,4)

These preventive attitude is important understandable by the fact that according to data of the WHO, as well as INSTAT, Albania, cardiovascular pathologies are at the top of the list of 10 causes of mortality of people around the world and in our country. (7.12)

Today it is accepted by all, well-known fact, atherogjen effect of high cholesterol, deposited in subendotel. (2,3,4,5)

While, recently theory of atherosclerosis, emphasize increasing of oxidative or nitrosative stress, or toxic free radicals as pathogenetic elements of atherosclerosis(1)

Based on this review in pathogenesis, today we konow that, higher cholesterolemia, higher LDL-cholesterolemia,higher VLDL-cholesterolemia, lower HDL-cholesterolemia, quantity and quality alteration of apo A and apo B; higher risk for atherogenic effect or atherosclerosis, faster subendotelial progress of minimal lesions toward atherosclerotic plaque and the percentage of vascular blockage. (2,4,14,16)

Numerous studies also show that each of these indicators are independent risk factors for atherosclerosis. (2,4,14,16). Practically applied in calculated formula atherogenic risk or atherosclerotic risk are very helpful and consider as priority cholesterolemia, HDL-cholesterolemia or furthermore apo A and Apo B.(14)

While, the need for a more sensitive and early alarm system to the atherosclerosis imposed studies about nitrogen oxide and vascular endothelium viewing the latter as an "dynamic organ". These studies give importance the phenomenon called "law grade inflammation", emphasizing inflammatory basis of atherosclerosis, and thus, the need for determining of the ADMA(asymmetric dimethyla-arginine), C-reactive protein, as early indicators of atherosclerosis. (1,5)

Other studies point out that the latest known there are a number of miRNA-s that modify expression or affect proatherosclerotic factors and others action against atherosclerosis protective factors. (6)

A recent study states that angiopoetin-like protein-2 can be used as an early indicator of proatherosklerotic status. (9)

Although studies on early indicators of atherosclerotic status continues, it is appropriate to note practical importance of atherosclerotic risk(cholesterol total/HDL cholesterol ratio) , or going further with the likelihood of cardiovascular events by Framingham criteria, especially at our age group, regardless that they can be considered clinically healthy or have never gone to the doctor.

Despite the restrictions that may have application of Framingham scoring, it takes importance in the evaluation of four important factors for atherosclerosis and risk of cardiovascular events such as age, sex, total cholesterolemia, HDL-cholesterolemia, smoking or non smoking, blood values pressure and is a serious effort of getting that specific weight of every indipendent risk facor and defining a unique heuristic indicator of risk for cardiovascular events, through a calculating formula.

1.2 Glycaemia and lipid profile, importance for the presence or not of a possible metabolic syndrome

Metabolic syndrome is considered as a result of the adipocyte homeostatic alteration, where the game of adiponectine, leptin, insulin etc. bring to lower adiponectine and brings insulin resistance syndrome, which is the basis of metabolic syndrome. Individuals with metabolic syndrome are more risky for cardiovascular events and are with high potential for type II diabetes. (4, 8, 15))

While knowing that the 3 by 5 parameters, according to the classic definition of metabolic syndrome, are laboratory and are sufficient to suggest metabolic syndrome to endocrinologist, we defined how many such patients we had.The relatively small number of cases of metabolic syndrome encountered, not give us the right to judge whether there is gender variation dominance of metabolic syndrome

1.3. Assessment of the status of stress-anxiety-depression and the risk for cardiovascular events.

Studies regarding this fact are contradictory, however stress can affect nutritional status, contributing to obesity, increased of cholesterolemia, hipertension, particularly in genetically predisposed individuals and thus also in cardiac events. Its noted significant corelation between stress and angina pectoris, but not between stress and acute myocardial infarction. Meanwhile stress assessment and its management are very important for the prevention of depression.(4,11,16).

2. Material and Methods

We examined data of 100 individuals clinically healthy individuals, nonsmoker, to NR4 Health Center, Tirana, which have undergone check-up control in the period January - June 2015.We have determined the variation of glycaemia and lipid profile in these individuals, according to gender and calculated in what percent of cases these values are altered.We determined, the number of cases with high values of lipid parameters, or glycaemia, in percentage, the risk for cardiovascular events according to Framingham criteria and atherosklerotic risk (ratio total cholesterol /

HDL-cholesterol), comparing if had statistical gender significant differences.How many individuals have blood glucose over 126mg / dl, then they will suggest to the endocrinologist as diabetic, and how individuals can be presumed with metabolic syndrome, based on laboratory indicators?

3. Results

Table 1: Variations of the values of glycemia and lipid profile in our healthy subjects

	Variation of values (mg/dl)	High values		
GLU	96.2±37.8	>110)	12%	
Chol	215±35.7	>200	53%	
HDL-ch	43.3±14.7	M<40mg/dl F<50mg/dl	28%	
LDL-ch	131±32.8	>130-160(borderline)	22 cases	22%
		>160-190 (high)	19 cases	19%
		>190 (very high)	2 cases	2%
TRI	136±82	>150	23%	

Comment.:Increased of cholesterolemia in more than half of the cases is consistent with literature data that recommends determining and monitoring of cholesterolemia as the main cause accused for atherosclerosis.

Table 2: The atherosclerotic risk male-female in our healthy subjects

	No of cases	Variation of AR (chol/HDL :ch ratio)	Statistical processing
F	32	5.08±1.25	P=0.0003
M	32	6.93±2.47	P=0.0003

Comment: According to this table, noted that the atherosclerotic risk for woman was from low to moderate on average, with statistical significant difference to men in whom the risk atherosclerotic was noticed by the average moderate in high and very high level. (P = 0.0003)Remember atherosclerotic risk estimated as low in value 3.3-4.4, moderate on average by 4.4-7.1; high 7.1-11.0 and very high if values are> 11.0) (13,14)

Table 3: The risk for cardiovascular events in the next 10 years according to Framingham criteria.

	Number of cases	Variation of risk for cardiovascular events in percentage (%) according to Framingham criteria	Statistical Processing
M	32	12.8±7.49	P=0.0001
F	32	2.59±2.01	P=0.0001

Comment.: The risk for cardiovascular events in this age has significant statistical difference in males compared with females (p = 0.001). We would suggest the extent check up examinations at a more advanced age in women, such .: 40-70 years.

Table 4: Patients suggested to endocrinologist for diabetes and metabolic syndrome

	No of cases GLU>126	No. of cases with high three laboratory parameters, for metabolic syndrome:
M	2	1
F	4	3

Paper ID: SUB157200

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Total	6%	4%
Recommendation	Endocrinologist diagnosis and monitoring	Family doctor monitoring Endocrinologist monitoring Dierologist monitoring. Cooperation between these specialists and patient.

Comment: Casual diagnosis of diabetes or metabolic syndrome, shows the need for increasing of awareness of the population for more frequent routine examinations. While a small number of cases of metabolic syndrome,4%(individuals with glicemia> 100, HDL-koesterolemia <40 for males kolesterolemia HDL <50 for women andTrigliceridemia> 150mg / dl)not orients us whether has or not certain predominance of the female gender to metabolic syndrome.

The level of stress in individuals who have undergone our specific validated questionnaire.

According DHQ 9 questionnaire variation of stress level was: 6.76 ± 5.92, with 18% of cases with stipple over 10, as the border point for referral to a psychiatrist with higher depressive likely.

4. Discussion

Atherosclerotic risk and risk for cardiovascular events according to Framingham criteria are very important guidance for evaluation as early medical attitude with as little cost, which will first be healthy diets, sports activities, and a stricter control health, and further treatments.

According to the literature, individuals with metabolic syndrome have a high potential for 2x cardiovascular events and 5 times for diabetes.(8)

While the concept that each lipid profile parameter considered independent risk factor for atherosklerosis, excluding triglyceride, imposes a prudent approach and careful evaluation by a cardiologist for antilipemiant treatment or diet. (2,4,16)
Studies on early indicators of atherosclerosis as angiopoetinen like protein- 2, asymmetric dimethyl arginine, hs- C reactive protein, etc, also could lead to new tactics for effective treatment against atherosclerosis, improve best medical decision and new therapies.(2,4,16)

5. Conclusions

1.Atherosclerotic risk rating, a sighting of lipid profile indicators as independent of risk factors for atherosclerosis, the application of the Framingham criteria, the suggestion to endocrinologist for metabolic syndrome, cooperation with specialties endocrinologist family physician cardiologist, highlights the importance of laboratory evaluation of glycemia, lipid profile we considered at clinically healthy patients who underwent the check-up control. (2,3,4)

2.According to our study at our age group, atherosclerotic risk was higher in males than females, which brings the need for differentiated evaluation of risk atherosclerotic age for women, which is consistent with literature data.(p=0.0003) (2)

3. Also the risk for cardiovascular events next 10 years and the gender variation selects the endangered men for these events with significant statistical difference.(p=0.0001). This conclusion is consistent with literature data. Let's say check up assessment at an age 5 years greater for female (65), because according to literature data, age is considered a major factor of risk for atherosclerosis, but> 45 year old for men and> 55 year old for women. (2)

4. The assessment of the above parameters and the study of the check-up data suggests continuous dynamic reorganization of the primary service centers as the possibility of presence and dietician or psychologist, or the characteristics of populations that they cover with service health.

5. Whether it would be possible a check up control at the age of under 40-years old, then we could see the possibility of early assessment of atherosclerotic indicators, which today are still under study, but ca be in the future important part of monitoring. (such as C reactive protein, asymmetric dimetilarginine, angiopoetina like protein-2), as the most effective choice of appropriate medical permit to atherosclerosis., and review of early indicators of metabolic syndrome as retinol-binding protein 4, vaspina, chemerine , omentin, fibroblast growth factor-21, adypocite dipeptil-peptidase or fatty acid binding protein and determination of adiponektine. (15,3)

Its important also assessment of imaging biomarkers as indicators in assessing the risk or presence of cardiovascular events as if annexina 5 or MRI, with the respective indications, or nano-biochip Saliva States to assess the 21 proteins, where the most important are C reactive protein, myoglobin and myeloperoxidase (5)
While atherosklerotic risk assessment and risk for cardiovascular events at geriatric age, or specific situation gets importance and evaluation of homocysteine. (15.3)

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