

4.P.134 Ultrasonography in fatty tissue depots detections

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Distinction between gynoid and android obesity on the basis of different anthropometric parameters only is not always significant and objective enough. Among the additional diagnostic procedures, US belongs to group of very important method because of its simplicity and accessibility in routine clinical research. Three groups of 34 tested women were investigated: the android (A) (BMI: 37.73 ± 6.29 , WHR: 1.1 ± 0.04) and gynoid (G) obese groups (BMI: 36.85 ± 6.59 , WHR: 0.80 ± 0.01) and control group (BMI: 20.86 ± 1.29 , WHR: 0.74 ± 0.04). The average value of visceral fat tissue (thickness from rectum muscle to aorta) was significantly higher in the A group (39.39 ± 10.22 mm) than in the rest two groups. At the same time, the average value of subcutaneous fat tissue (thickness from skin to rectum muscle) was significantly higher in the G group (31.29 ± 6.14 mm) than in A and control groups. The A group had a higher levels of insulinemia during the oGTT, total, LDL-Chol. and triglycerides and lower values of HDL-Chol. than G and control groups.

4.P.135 Relationship between abdominal sagittal diameter (ASD), serum lipids and insulinemia in different obesity types

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The aim of the study was to evaluate relationship between SAD (measured by caliper), serum lipids and insulinemia, in the groups of 34 persons with android (A)(BMI: 37.73 ± 6.29 , WHR: 1.1 ± 0.04) and gynoid (G)(BMI: 36.85 ± 6.59 , WHR: 0.80 ± 0.01) obesity. The ASD values were significantly higher in the A than in G group (30.66 ± 5.75 vs. 25.66 ± 2.82 cm, $p < 0.001$) and showed better correlation with examined metabolic parameters than WHR values. The values of insulinemia were significantly higher in the A group in all times during the oGTT ($p < 0.01$). At the same time, there were no differences between the investigated groups concerning the glycemia values. The hyperinsulinemia was recorded and followed by higher values of total cholesterol (Chol), triglycerides (Tg), LDL-Chol. and lower values of HDL-Chol. in the A than in the G group (t. Chol. 6.28 ± 0.77 vs. 5.28 ± 0.65 mmol/l, $p < 0.05$, Tg: 2.75 ± 0.96 vs. 1.30 ± 0.43 mmol/l, $p < 0.05$, LDL-Chol: 4.51 ± 0.33 vs. 3.78 ± 1.64 , $p < 0.05$ HDL-Chol: 0.88 ± 0.29 vs. 1.14 ± 0.37 mmol, $p < 0.01$). On the basis of our results, we consider the measuring of SAD to be necessary in the aim of recognition of special obesity imperiled subpopulation, which is not possible using WHR relations only.

4.P.136 Response to cholesterol feeding by the JCR:LA-cp rat

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The JCR:LA-cp rat is an obese strain that develops a profound insulin resistance, and cardiovascular disease that correlates with hyperinsulinemia. Vessel wall alterations consistent with cellular perturbation, more severe in the obese, were also identified in lean animals. We examined the ultrastructural response of the vessel wall to cholesterol feeding (0.25% cholesterol in standard chow for 6 months) to determine if it would be enhanced in obese compared to age-matched lean rats. Both phenotypes developed hypercholesterolemia that was enhanced in the hypertriglyceridemic obese rats. Lipid was identified in the intimas of both genotypes by oil red O stain, but the deposition was greater in the corpulent animals. By transmission electron microscopy the intimas of both corpulent and lean animals were thickened, and contained foam cells and smooth muscle cells, and these alterations were also more severe in the corpulent animals. Although both phenotypes of the JCR:LA-cp rat show arterial wall abnormalities, the corpulent, insulin-resistant animals appear to be more vulnerable to challenge by hypercholesterolemia. These observations are consistent with hyperinsulinemia as an important component in the response by the vessel wall to hyperlipemic challenge.

NUTRITION/DIET (AND BIOACTIVE COMPONENTS OF FOOD)**4.P.137 Level of nutrition knowledge on the atherosclerosis prophylaxis between youth and adults with elementary education**

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In Poland, approximately 25% of people have elementary education. About 15% overall mortality is caused by coronary heart diseases among 40 year old people. In the study participated 120: 60-absolvent of primary school at the average age of 15 and 60- adults at the average age of 40 with elementary education.

The research was conducted with the use of a questionnaire and also the nutrition knowledge and its source. The level of nutrition knowledge is definitely different in both groups, for example: the eggs as rich source of cholesterol indicate 60% adults and 7.1% young people; 41% adults know that it is necessary to eat sea-fish 2-3 times a week and only 11.1% youth.

In both groups about 17% indicate the diet rich in fat and cholesterol as the risk factor in development of atherosclerosis. The main source of nutrition knowledge for youth was lessons of biology (42.8%) and for adults -television and newspapers-, but the young people in future would like to get the nutrition information also from television and newspapers. The results of the study indicate that the nutrition knowledge of young people is poor, it could be connected with wrong teaching system.

4.P.138 Effects of dietary fats on lipid profile and sympathetic nervous system activity in rats

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Changes in sympathetic nervous system activity are implicated in the pathogenesis of hypertension to which the sympathetic response to dietary fat may play a contributory role.

The aim of this study was to test the hypothesis that sympathetic responses to dietary fat are dependent on the type of fat ingested.

This study was carried out on 30 rats ten rats were fed olive oil, ten rats corn oil and ten rats were fed cotton seed oil.

The following parameters were measured before and eight weeks after an experimental period of diet treatment:

- (1) Lipid profile including
 - (a) Serum Cholesterol.
 - (b) Serum triglycerides.
 - (c) HDL cholesterol.
 - (d) LDL cholesterol.
- (2) heart rate
- (3) Arterial blood pressure.
- (4) Plasma insulin by radioimmunoassay.
- (5) Plasma catecholamines by radioimmunoassay.

The results show that corn oil increases significantly systolic blood pressure heart rate plasma insulin, catecholamines serum cholesterol and triglycerides. i.e increases sympathetic activity.

While olive oil did not cause any change in these parameters.

4.P.139 The efficacy of dietary therapy in the management of hypercholesterolemia

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Introduction: Diet is the cornerstone of management for all patients with hyperlipidemia and should be used before any pharmacologic intervention. Patients with hypercholesterolemia and normal weight should be placed on isocaloric diet with reduction in total and saturated fat and cholesterol to the extent which can be tolerated by the patient. While there is a significant reduction in triglycerides after diet and weight loss, only 5-15% reduction in the total cholesterol can be expected after hypocholesterolemic diet. There is also a significant individual variability in the efficacy of diet. Approximately 30% of patients are diet insensitive and their cholesterol levels change little when placed on a step III diet.

Patient-Materials: The aim of our study was to estimate the role of dietary therapy in the management of hypercholesterolemic patients of Northern Greece, a population with generally low total and saturated fat consumption. 75 hypercholesterolemic subjects (33 males and 42 females), aged 41–75 (mean age 56.9) were examined in our lipid clinic. All patients were evaluated and received instructions for dietary modifications. Blood samples for lipid profile were taken before, 3 and 6 months after.

Results: Our results showed that the average reduction of total cholesterol was 4.14% (from 264 mg/dl to 252 mg/dl) and 6.88% (from 264 mg/dl to 244 mg/dl) after 3 and 6 months respectively, while the average reduction of LDL was 6.8% after 3 months and 9.9% after 6 months. Of the 75 hypercholesterolemic subjects, only 17 (22.6%) reduced their total cholesterol more than 15%, while 27 subjects (36%) had reduction of less than 5%. The average reduction of total cholesterol in women was 5.8% and in men was 7.96%. 40 (53%) of our patients achieved weight loss averaging 3.2 Kg. 29 patients (38.6% of the total) found it difficult to follow this diet.

Conclusions: The small reduction of total and LDL cholesterol may be attributed also to the fact that the majority of our patients were already on some form of Mediterranean diet and there was no significant switching in their dietary habits.

4.P.140 A commercial garlic preparation has no significant effects on lipoproteins in patients with hypercholesterolemia

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Effective reduction of cholesterol in patients with hypercholesterolemia has been shown to decrease cardiovascular morbidity and mortality. Mild cholesterol lowering effects have been attributed to garlic or garlic-containing drugs. These drugs have a considerable market but there is still lack of convincing evidence for their therapeutic potential. Therefore, a placebo-controlled randomized crossover study in 26 patients (12 men, age 59 ± 7 yrs, and 14 women, 58 ± 8 yrs) with hypercholesterolemia and no history of coronary heart disease was performed to elucidate the potential lipid lowering effect of a commercial drug containing a garlic oil preparation. The patients were not taking any medications interfering with lipid metabolism and they were otherwise healthy and not overweight (body mass index 25.0 ± 2.6 kg/m² [men] or 25.6 ± 2.5 kg/m² [women]). Their baseline lipoprotein profile at inclusion was (mg/dl): total cholesterol 291 ± 29 , LDL-C 207 ± 30 , HDL-C 58 ± 16 , triglycerides 127 ± 64 . The study consisted of two crossover sequences, each starting with a four week single-blind placebo period followed by a double-blind 12 week treatment period. During this period the patients received twice daily one coated tablet containing 5 mg of diallylsulfides distilled from garlic or matching placebo tablets. Blood for lipoprotein analysis was drawn twice during the last week of each period. In addition, cholesterol absorption was measured during this week using a constant stable isotope feeding method as previously described (J. Lipid Res. 34, 1993, 1039). Possible changes in cholesterol synthesis were measured by 24 h urinary excretion of mevalonic acid and the ratio of lathosterol to cholesterol in serum. Body weights were stable and dietary cholesterol and fat intake were similar during both treatment periods. There were no significant differences between both periods (data are changes from baseline):

Treatment	Total Chol	HDL-C	LDL-C	TG
Placebo	+0.3%	-5.2%	+2.9%	+2.5%
Garlic drug	+0.2%	-3.0%	+1.6%	+3.9%

Fractional cholesterol absorption from the intestine was $38.3 \pm 10.7\%$ during placebo and $37.5 \pm 10.5\%$ during garlic drug treatment (n.s.). There was no significant change in cholesterol synthesis between placebo and garlic drug treatment. The present data suggest that the investigated garlic preparation has neither a significant effect on serum lipoproteins, nor on cholesterol absorption or on body cholesterol synthesis in patients with hypercholesterolemia. (Support: BMFT 01EC9402)

4.P.141 Prevention of cholesterol gallstone formation in the hamster by β -cyclodextrin, a resistant carbohydrate

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β -cyclodextrin (BCD), a cyclic oligosaccharide containing 7 glucopyranose units all linked in α 1–4 positions, resists to digestion in the small intestine but is fermented in the colon. This oligosaccharide is able to encapsulate in vitro

cholesterol, bile acids, lipophilic vitamins in its hydrophobic cavity. Previous studies demonstrated the hypocholesterolemic effect of BCD in rats, hamsters and pigs. The effects of replacement of sucrose by increasing amounts of BCD (0, 5 or 10%) was investigated in lithogenic and control diet. Plasma and liver cholesterol, bile acid composition in bile, acid and neutral sterols in feces and cholesterol absorption were measured in male growing hamsters receiving the diets for 30 days. In hamsters receiving a lithogenic diet, the replacement of 5% sucrose by 5% BCD prevented the apparition of gallstones, whereas the addition of 5% lactose had no effect. In presence of BCD, the amount of chenodeoxycholic acid in bile was reduced and that of cholic acid increased thus hydrophobic index decreased. In animals receiving a control diet, BCD reduced plasma cholesterol, liver cholesterol and triacylglycerol concentrations, and stimulated HMGCoA reductase activity. The fecal loss of cholesterol and bile acids was stimulated, and a decrease in intestinal cholesterol absorption was observed. The bacterial transformation of cholesterol into coprosterol was markedly reduced.

BCD probably encapsulates cholesterol and bile acids in the digestive tract and then accelerates body cholesterol turnover by reducing cholesterol absorption, increasing cholesterol and bile acid synthesis and reducing the microbial degradation of cholesterol. BCD induces a marked shift in the two bile acid pathway of synthesis. It prevents the reabsorption of chenic acid and stimulates its fecal elimination. Thus, the prevention of gallstone formation in this model is related to a decrease in the biliary hydrophobic bile acids.

4.P.142 Effect of lactobacillus plantarum (pro viva) on LDL-cholesterol and fibrinogen levels in subjects with moderately elevated cholesterol

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It is known that food products which contain Lactobacillus acidophilus and Lactobacillus plantarum reduce cholesterol level. This effect is probably exerted by promoting degradation of bile acids by bile acid hydrolase and as a consequence of increase cholesterol uptake by LDL receptor pathway in the liver. The purpose of this study was to determine the influence of "Pro viva", food product reached in Lactobacillus plantarum 299 v., on serum lipid and fibrinogen levels in subjects with moderately elevated cholesterol level. We have examined 30 healthy men selected according age, BMI, lipid parameters and blood pressure, randomized and divided to two groups (group A n = 15 with "Pro viva", group B n = 15 with placebo). Each person have drunk 200 ml/day "Pro viva" or placebo for 6 week periods with no change in their lifestyle. Results showed significant decrease of total cholesterol (233 ± 33 vs 216 ± 31 mg/dl), LDL-cholesterol (156 ± 36 vs 141 ± 34 mg/dl) and fibrinogen (319 ± 82 vs 276 ± 58 mg/dl) levels in group taking "Pro viva" after 6 weeks compare to baseline values. There were no significant difference in HDL-cholesterol and triglyceride levels. We conclude that diet supplementation with "Pro viva" could be beneficial for patients with moderately elevated cholesterol in prevention of cardiovascular disease.

4.P.143 Influence of an eggplant and orange juice on lipids and fibrinogen

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In Brazil, there is a general popular concept that an eggplant and orange blended juice can positively modify lipid profile. Indeed, eggplant is rich in dietary fiber that could have an influence on blood lipids. We tested the influence of the juice on the lipid profile and fibrinogen level. Blood samples were collected before and three weeks after daily, fasting drink of a juice prepared with a fresh unpeeled eggplant processed in a blender with orange juice to complete 200 ml. Lipid and fibrinogen levels were measured by standard laboratory tests. We studied 19 healthy subjects, 11 females and 8 males. The mean age was 26 years old.

	Baseline	Treatment	p
Total cholesterol	198 \pm 36	202 \pm 41	0.57
LDL cholesterol	123 \pm 32	129 \pm 32	0.4
HDL cholesterol	56 \pm 14	55 \pm 13	0.66
Triglycerides	90 \pm 46	85 \pm 37	0.70
Fibrinogen	310 \pm 54	289 \pm 65	0.32

Data are mean \pm SD, expressed in mg/dl.

In conclusion, in the population studied, lipid profile and fibrinogen level were not modified by an eggplant and orange blended juice.