710 EFFECT OF DIETARY AND ANTISMOKING ADVICE ON MORTALITY IN MEN DEPENDS ON CONCENTRATION OF TRIGLYCERIDES. A 22-YEAR FOLLOW-UP STUDY

I. Ellingsen, I. Hjermann, M. Abdelnoor, E. Hjerkinn, S. Tonstad. *Ullevål University Hospital, Oslo, Norway*

The Oslo Diet and Antismoking Trial randomised 1232 high-risk men aged 40–49 years to lifestyle intervention or control groups for five years. The study demonstrated a significant reduction in coronary heart disease (CHD) events in the intervention group at the end of the study and after 102 months. This report presents results of a 22-year follow-up of the cohort.

Methods: We examined the effect of group assignment on CHD mortality in participants with usual (lower three quartiles, range 0.80–3.69 mmol/l; n=924) or high non-fasting triglycerides (upper quartile, range 3.70–21.4 mmol/l; n=308) in 1972–3 at inclusion. We recorded vital status on December 31, 1996, and ascertained causes of death by linkage to Statistics Norway.

Results: During 26,734 person-years of follow-up, 136 men died of CHD. Among hypertriglyceridemic men death occurred in 11 (7.3%) of the intervention group versus 26 (16.5%) of controls (relative risk 0.44; 95% CI 0.18–0.89; 9=0.014). A Cox proportional hazards model adjusted for cigarette smoking, systolic blood pressure, body mass index, serum glucose and consumption of three or more eggs/week yielded a hazard ratio for the intervention of 0.35 (95% CI, 0.17–0.73; p=0.005). In men with usual triglyceride concentrations the intervention had no effect on CHD mortality (relative risk 0.99; 95% CI 0.79–1.22; p=0.9).

Interpretation: These data suggest that advice during 1972–78 to change diet and smoking habits more than halved the relative risk for CHD mortality after 22 years in men with high nonfasting triglyceride concentrations. Men with usual triglyceride concentration did not appear to achieve this long-term benefit of lifestyle intervention.

711 IMPLEMENTATION OF GUIDELINES TO SCREEN RELATIVES OF PATIENTS WITH PREMATURE CHD

S. Tonstad, A. Westheim. *Ullevål University Hospital, Oslo, Norway*

The EAS strongly recommends screening family members of patients with premature CHD, but compliance with this recommendation has not been extensively studied. Moreover, confidentiality laws prevent physicians from directly contacting relatives. We examined the feasiblity and efficacy of family screening via probands in a university hospital setting.

Participants/methods: Consecutive men <55 years and women <65 years (probands) admitted to the cardiology department for acute coronary syndrome, angioplasty or after bypass surgery were invited to a follow-up visit within 6 months of admission. At this visit, CHD risk factors were assessed, lifestyle advice was reinforced and medications were adjusted, if indicated. The patient was asked to distribute laboratory form and questionnaires for CHD testing to children and siblings >age 20 years. Results of blood tests and questionnaires were sent directly to the clinic for follow-up.

Results: 566 men and 193 women attended the visit (95% of invited). Of those with eligible children, 93% were willing to contact them and 78% of those with eligible siblings were willing to contact them. 69% of probands had at least one relative who completed screening. Multivariate logistic regression showed that significant (P<0.05) predictors (among probands) of successful screening were female gender (odds ratio (OR) 2.5), elementary vs university education (OR 1.8), non-smoking (OR 1.7) and non-immigrant background (OR 3.1). Nonsignificant predictors were history of high cholesterol, family history of premature CHD and belief that heredity was important for one' s CHD. Among tested brothers (n=262) and sister (n=324), 42% and 45%, respectively, smoked and 52% and 45%, respectively, had a LDL cholesterol >4.0 mmol/l. Among sons (n=213) and daughters (n=240), 32% and 42%, respectively, smoked and 28% and 15%, respectively, had a LDL cholesterol >4.0 mmol/l.

Conclusion: The majority of patients with premature CHD are willing to approach relatives for CHD screening. Screening yielded a high percentage of relatives who smoked and/or had high LDL cholesterol levels. Methods to increase screening among men, people with university education, smokers and immigrants require further study.

712 PULSE WAVE ANALYSIS AND CARDIOVASCULAR EVENT RISK PREDICTION IN PATIENTS WITH HYPERLIPIDEMIA

G.S. Toor[1], A.S. Wierzbicki[1], S. Millaseau[2], P.J. Chowienczyk[2], J.M. Ritter[2]. [1]*Departments of Chemical Pathology,* [2]*Department of Clinical Pharmacology, St. Thomas' Hospital, London, UK*

Risks for atherosclerotic events are usually defined using equations incorporating multiple risk factor variables derived from epidemiological studies. The measurement of physiological changes in large arteries represents an additional method of assessing cardiovascular risk. This pilot study recruited 10 normal male controls; 4 patients with familial hypercholesterolemia and 4 patients with type V hyperlipidemia. All patients were drug naive and had basic anthropometry, blood pressure and lipids measured. Pulse wave profiles were assessed by pulse wave analysis and by photoplethysmography. Indices derived from non-invasive techniques were compared with risk of coronary heart disease (CHD) events or stroke predicted from the Framingham algorithm. Pulse wave velocity (PWV) correlated with predicted risk of CHD (r=0.65; p=0.006) and stroke (r=0.58; p=0.002) using linear and semi-logarithmic models. Stiffness index (SI) was correlated semi-logarithmically with CHD (r=0.50; p=0.03) and stroke (r=0.68; p=0.002) risk. No correlations were found between radial or carotid augmentation index or reflection index and any measure of cardiovascular risk. In this pilot study both PWV and SI showed promise as markers of CHD and stroke risk in patients in hyperlipidemia when a physiologically plausible semi-logarithmic model was employed.

713 ANGIOSCOPIC OBSERVATION OF THE ATHEROSCLEROSIS OF CHOLESTEROL-FED OVARIECTOMISED JAPANESE MONKEYS

R. Torii[1], N. Ikeda[2], T. Ito[3], S. Yamada[3], M. Shiomi[3], Y. Eguchi[1]. [1]*Shiga University of Medical Science, Otsu;* [2]*Otsu Municipal Hospital;* [3]*Kobe University School of Medicine, Japan*

Objective: Angioscopic observation is useful to observe a process of the progression of atherosclerosis. Using an angioscope, we observed atherosclerotic lesions of Japanese monkeys fed cholesterol-rich diet.

Methods: Adult ovariectomized Japanese monkeys were used in this study. Three monkeys were fed 2% cholesterol diet (C-group) and other three monkeys were fed 2% cholesterol diet with estradiol (CE-group) for 30 months. During the treatment, we observed aortic lesions with angioscopy. At the end of the treatment, the aortic lesions were examined histopathologically. Serum lipid levels were measured periodically.

Results: The serum cholesterol levels in C-group were increased from 110 mg/dl to 270 mg/dl, and the atheroma was first observed in six months treatment. In the CE-group, the exposure levels of the serum cholesterol and Lp(a) during treatment were low compared to C-group. The aortic lesions of the CE-group were first observed in 12 months treatment. The intimal thickness of CE-group aorta was 58% of the C-group. This finding was similar to the angioscopic observation. The aortic lesions were fibromuscular type in both groups.

Conclusion: The angioscopic observation is useful in evaluation of atherosclerosis.

714 COMPARISON OF THREE DIFFERENT GUIDELINES FOR TREATMENT OF DYSLIPIDEMIA IN TYPE 2 DIABETIC PATIENTS

A. Torri[1], A. Branchi[2], D. Sommariva[1]. *1Department of Internal Medicine, G. Salvini Hospital, Garbagnate Milanese;* [2]*Department of Internal Medicine, University of Milan, Maggiore Hospital IRCCS, Milan, Italy*

Lipid lowering therapy was successful in decreasing cardiovascular disease (CVD) morbidity and mortality in type 2 diabetic patients. An unanswered question is the serum lipid level at which to initiate drug therapy and the goal of lipid lowering treatment. The American Diabetes Association (ADA), the Adult Treatment Panel (ATP III) of National Cholesterol Education Program and the Task Force of the European Atherosclerosis Society (EAS) provided guidelines for management of dyslipidemias in type 2 diabetics. The guidelines are somewhat different. We applied the 3 guidelines in 1010 type 2 diabetics in fairly good metabolic control. ATP III and ADA recommended lipid lowering therapy in 67% and in 77% of patients with CVD and in 66% of patients without CVD. EAS recommended treatment in 71% of patients with CVD and in 63% of patients without CVD. In 57% of cases the 3 guidelines agreed on treatment, in 25% on no-treatment and in 18% were