

this association was lost among children with active infection (adj. OR 1.59, 95% CI 0.72 to 3.54).

Conclusions The association between markers of atopy and wheeze increased with age. The results suggest modification of the relationship between SPT and wheeze by active geohelminth infections.

P2-198 OVERWEIGHT ASSOCIATED WITH NON-ATOPIC WHEEZE IN RURAL TROPICS

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Introduction The parallel rise in prevalence of asthma and overweight/obesity in some Latin American countries has led to suggestions of a link between the two epidemics. The aim of this study was to explore the effects of being overweight on wheeze, exercise-induced bronchospasm and atopy.

Methods A case-control study was conducted among 809 Afro-Ecuadorian children aged 7–19 yrs living in rural communities in tropical Ecuador. Asthma cases were selected based on the presence of recent wheeze and controls as a random sample of those without symptoms by questionnaire. Atopy was measured either by the presence of allergen specific IgE (asIgE) in serum or by allergen skin test reactivity (SPT). Overweight children were those with a Body Mass Index (BMI) $\geq +1$ z-score based on WHO growth curves (2007).

Results Comparing atopic vs non-atopic children, the prevalence of SPT (adj. OR 2.12, 95% CI 1.22 to 3.68) and the presence of asIgE (adj. OR 2.30, 95% CI 1.10 to 4.83) was greater in overweight children compared to those with normal weight/underweight. Comparing non-atopic wheezers with non-atopic non-wheezers, being overweight was significantly associated with non-atopic wheeze (adj. OR 2.22, 95% CI 1.07 to 4.63) when atopy was defined as asIgE but not SPT. Being overweight was not significantly associated with atopic wheeze (comparing atopic wheezers with atopic non-wheezers) and with severe wheeze or exercise-induced bronchospasm irrespective of atopic status.

Conclusion Although being overweight was associated with atopy, it was also associated with wheeze, and somewhat surprisingly this latter effect was not observed among atopic children.

P2-199 ASSOCIATION BETWEEN ADHERENCE TO THE MEDITERRANEAN DIET AND BONE QUALITY IN A SAMPLE OF PORTUGUESE ADOLESCENTS

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Introduction Dietary patterns provide insights into how diet, rather than specific nutrients, affects bone health. We aimed to evaluate whether Mediterranean diet associates with bone mineral density at 13 years-old.

Methods We used data from 1232 adolescents (44.7% males) born in 1990 and assessed at 13 years-old (EPITeen cohort). Adolescents were evaluated through physical examination, including height, weight and forearm bone mineral density (BMD) using dual-energy x-ray absorptiometry. Dietary intake was assessed using a food frequency questionnaire and adherence to the Mediterranean diet was evaluated through an adapted score (KIDMED index). The final

score, the sum of all items, was classified into three adherence levels: –2 to 3, 4 to 6 and ≥ 7 . The association between KIDMED index and BMD was quantified using linear regression. Coefficients were adjusted for body mass index, physical activity, smoking status and parental formal education.

Results Low KIDMED index was found in 23.9% of the girls and in 22.5% of the boys and 47.3% of girls and 46.1% of boys had intermediate index results. Mean (SD) BMD was 0.361 (0.058) g/cm² in girls and 0.344 (0.051) g/cm² in boys. Adherence to the Mediterranean diet showed no relation with BMD in girls. Significantly higher average BMD was found among boys with intermediate (0.013, 95% CI: 0.003 to 0.023) and high KIDMED index (0.017, 95% CI 0.006 to 0.028) when compared to those with low index.

Conclusion A Mediterranean dietary pattern can be associated to better bone health since early in life.

P2-200 POPULATION TRENDS IN THE INCIDENCE AND OUTCOMES OF ACUTE MYOCARDIAL INFARCTION IN A MEDITERRANEAN REGION OF SOUTHERN EUROPE

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Introduction The aim of this population-based study was to examine trends in the myocardial infarction incidence and mortality rates between 2000 and 2009 in Navarre, Spain.

Methods All admissions for myocardial infarction in a region of over half a million inhabitants from January 2000 to December 2009 were identified from the hospitals discharge databases. Age- and sex-adjusted incidence and 30-day and 30–365-day mortality rates were calculated.

Results We identified 4451 persons 30 years of age or older with a first myocardial infarction. The incidence showed a significant decrease from 128 cases per 100 000 person-years in 2000 to 98 cases per 100 000 person-years in 2009, a 23% relative decrease. Only in the case of ST-segment elevation myocardial infarction the decrease was significant. The proportion of patients who underwent revascularisation within 30 days after myocardial infarction increased from 26.8% in 2000 to 65.6% in 2009. The age- and sex-adjusted 30-day mortality after myocardial infarction decreased from 10.7% in 2000–2004 to 7.6% in 2005–2009. No changes were observed in 30–365-day mortality.

Discussion The important fall in the incidence observed in this population is consistent with other studies from other industrialised areas of the World. The higher rates of ST-segment elevation myocardial infarction vs non-ST could be indicating that the new definition is not broadly applied. The decreasing incidence, particularly ST-segment elevation myocardial infarction, is probably explained, at least in part, by substantial improvements in primary prevention efforts. Important improvements were observed also in the hospital care, particularly the big increase in revascularisation.

P2-201 CHANGES IN AMINOTRANSFERASES INDICATE CHANGES IN HEPATOSTEATOSIS IN PEOPLE WITH TYPE 2 DIABETES: THE EDINBURGH TYPE 2 DIABETES STUDY

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Background Recent data have suggested that plasma aminotransferases may be of limited use in the diagnosis of non-alcoholic

fatty liver disease. However, data on the use of aminotransferases to monitor change in hepatosteatotic state are lacking.

Methods 394 participants, aged 63–79 years, from the Edinburgh Type 2 Diabetes Study, a large, randomly-selected population of patients with Type 2 diabetes, were assessed on two occasions approximately 3 years apart. Liver ultrasonography was undertaken and both plasma alanine aminotransferase (ALT) and aspartate-aminotransferase (AST) were measured. Hepatic steatosis was graded as either “normal”, “mild” or “moderate/severe” according to findings on ultrasound. Change in steatosis was classified as either regression or progression by 1 or 2 categories. ANOVA (with trend) analysis was used to assess the association between change in steatosis and change in aminotransferase levels.

Results Mean follow-up was 2.7 years. 5.1% (n=20) of participants regressed two categories, 14.7% (n=58) regressed one category, 60.7% (n=239) showed no change, 12.4% (n=49) progressed one category and 7.1% (n=28) progressed two categories. There was a statistically significant linear trend for both ALT and AST ($F(4,3)=4.76$, $p=0.03$ and $F(4,3)=10.70$, $p=0.01$ respectively) indicating that as the hepatosteatosis stage changed the aminotransferase level increased or decreased proportionally.

Conclusion In a relatively large sample of patients with type 2 diabetes representative of patients with type 2 diabetes in general, we have shown that change in aminotransferase levels are proportionally associated with change in levels of hepatosteatosis. This suggests that aminotransferases may be useful in monitoring progression of steatosis.

P2-202 THIAZOLIDINEDIONES ARE ASSOCIATED WITH REGRESSION OF HEPATOSTEATOSIS IN PEOPLE WITH TYPE 2 DIABETES: THE EDINBURGH TYPE 2 DIABETES STUDY

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Background Increasing evidence suggests that some antidiabetic medications may improve markers of abnormal liver structure and function in people with non-alcoholic fatty liver disease. We investigated this association in older people with type 2 diabetes.

Methods 474 participants, aged 63–79 years, from the Edinburgh Type 2 Diabetes Study, a large, randomly-selected population of patients with Type 2 diabetes, underwent assessment on two occasions. At baseline, liver ultrasonography was undertaken and antidiabetic medications (metformin, sulphonyureas and thiazolidinediones) were recorded. Liver ultrasonography was repeated approximately 3 years later. Hepatosteatosis was graded as either normal or “fatty”, and the change between examinations as regression, no change or progression. χ^2 for trend was used to analyse the association.

Results Mean follow-up was 2.7 years. 9.5% (n=45) of participants progressed, 13.9% (n=66) regressed and 76.6% (n=363) remained the same. Thiazolidinedione use was significantly higher among participants whose hepatosteatosis regressed (5.0%, 11% and 19.7% in participants with progression, no change and regression respectively, $p=0.02$). Similar figures for metformin use were 55.0%, 67.0% and 67.2% respectively ($p=0.28$) and for sulphonyurea use were 15.0%, 34.9% and 31.1% respectively ($p=0.19$).

Conclusion In a large sample of patients with type 2 diabetes representative of patients with type 2 diabetes in general, thiazolidinedione use was associated with regression of hepatosteatosis. This is consistent with emerging evidence from clinical trials suggesting that there may be a role for thiazolidinediones beyond glucose control in patients with type 2 diabetes. Further analyses are warranted to explore the potential mechanism underlying this association.

P2-203 ASSOCIATION OF VITAMIN D AND CARDIOMETABOLIC RISK FACTORS AMONG A MALAY COHORT IN KUALA LUMPUR, MALAYSIA

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Introduction Epidemiologic studies suggest that vitamin D (25-hydroxyvitamin D) is inversely associated with metabolic syndrome in the western populations. However, evidence from Asian population is limited. The present study was conducted to investigate the association of vitamin D and cardiometabolic risk factors among an existing Malay cohort in Kuala Lumpur.

Methods This is an analytical cross sectional study. A total of 380 subjects were sampled. Their vitamin D status, fasting blood glucose, full lipid profile, blood pressure, weight, height and waist circumference were measured.

Results There were more (58%) female respondents. Their mean age was 48.5 ± 5.2 years. The prevalence of Metabolic Syndrome was 37.0% while the mean vitamin D level was 44.5 (95% CI 42.6 to 46.4) nmol/l. Females had significantly lower mean vitamin D level (36.3; 95% CI 34.5 to 38.0 nmol/l) compared to males (56.1; 95% CI 53.2 to 59.2 nmol/l). Respondents with low (cut off at 50 nmol/l) vitamin D level had 2.63 (95% CI 1.58 to 4.36) times odds of having abdominal obesity. Low vitamin D levels were associated with higher odds of low HDL-lipoprotein (OR: 1.26; 95% CI 0.70 to 2.27), high fasting blood glucose (OR: 1.22; 95% CI 0.70 to 2.12), abnormal/high triglyceride (OR: 1.46; 95% CI 0.87 to 2.47) and abnormal systolic and/or diastolic blood pressure (OR: 1.43; 95% CI 0.85 to 2.38). Respondents with lower vitamin D levels had higher odds for Metabolic Syndrome (OR: 1.70; 95% CI 1.01 to 2.89).

Conclusion Our results concur with those from the West where vitamin D deficiencies are associated with cardiometabolic risk factors.

P2-204 ASSOCIATION OF BODY MASS INDEX AND HEALTH-RELATED QUALITY OF LIFE IN HIGH-RISK CARDIOVASCULAR PATIENTS

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Introduction Apart from clinical events, health-related quality (HRQoL) is an important outcome in high-risk cardiovascular patients. As body mass index has been associated with clinical events (“obesity paradox”), we investigated the relationship between body mass index and health-related quality of life.

Methods Patients were included with hypercholesterolaemia and an indication for statin therapy in 1961 primary care practices. HRQoL was assessed with the Short Form (SF)-12 health status instrument at baseline, after 6 and after 12 months. Physicians assessed patient body mass index (BMI). A mixed-effects regression model accounting for the three measurement points was used to investigate (a) the association between BMI and HRQoL at baseline, and (b) the association between change in BMI and change in HRQoL.

Results A total of 5082 patients (2165 females) were included. The mean change in BMI within 12 months was 0.05 (SD: 1.11) kg/m².