

P2-15 GENETIC POLYMORPHISMS OF INNATE IMMUNITY-RELATED INFLAMMATORY PATHWAYS AND THEIR ASSOCIATION WITH FACTORS RELATED TO TYPE 2 DIABETES

doi:10.1136/jech.2011.142976h.52

^{1,2}P Arora, *^{1,3}B Garcia-Bailo, ⁴Z Dastani, ^{1,2}D Brenner, ¹A Villegas, ¹S Malik, ⁵B Richards, ³A El-Sohemy, ^{1,2}M Karmali, ¹A Badawi. ¹Office for Biotechnology, Genomics and Population Health, Public Health Agency of Canada, Toronto, Ontario, Canada; ²Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada; ³Department of Nutritional Sciences, University of Toronto, Toronto, Ontario, Canada; ⁴Department of Epidemiology, Biostatistics and Occupational Health, McGill University, Montreal, Quebec, Canada; ⁵Department of Medicine, McGill University, Montreal, Quebec, Canada

Introduction Type 2 diabetes mellitus (T2DM) has been linked to a state of chronic inflammation due to innate immunity. Serum levels of pro-inflammatory cytokines are elevated in the early stages of T2DM and increase with disease progression. Genetic variation can affect the innate immune response to environmental factors, and may determine an individual's risk of disease.

Methods We conducted a cross-sectional study in 7384 subjects from the TwinsUK Registry to evaluate the association between 18 single nucleotide polymorphisms (SNPs) in five genes (TLR4, IL1A, IL6, TNFA, and CRP) along the innate immunity-related inflammatory pathway and biomarkers of predisposition to T2DM [fasting insulin and glucose, HDL- and LDL- cholesterol, triglycerides (TGs), amyloid-A, sensitive C reactive protein (sCRP) and vitamin D binding protein (VDBP) and body mass index (BMI)].

Results Of the 18 SNPs examined (18 SNPs with 9 phenotypes), 14 were significantly associated with a metabolic risk factors for T2D (P<0.0027). Fasting insulin was associated with SNPs in IL6, TLR4 and TNFA, whereas serum LDL-C was associated with variants of IL1A and IL6. Serum CRP level was associated with SNPs in IL1A, IL6, TLR4 and CRP. Correlation among the different factors related to risk of T2DM showed a significant (p<0.0001) positive correlation between BMI and glucose (r=0.22), insulin (r=0.23), amyloid-A (r=0.23), sCRP (r=0.37), LDL-C (r=0.09) and TGs (r=0.32).

Conclusion Genetic variants in the innate immunity pathway are associated with biomarkers of T2DM and metabolic syndrome, an observation that may provide a rationale for studying their use in early disease risk prediction.

P2-16 HIGH BURDEN OF RHEUMATIC DISEASES IN A POPULATION BASED STUDY FROM LEBANON

doi:10.1136/jech.2011.142976h.53

¹M Chaaya, ¹Z Slim,* ¹R Habib, ^{1,2}T Arayssi, ^{1,3}R Dana, ¹I Uthman. ¹American University of Beirut, Beirut, Lebanon; ²Weil Cornell Medical College, Doha, Qatar; ³Schering-Plough Corporation, USA, United States Minor Outlying Islands

Introduction Rheumatic diseases are among the most prevalent chronic diseases worldwide. Knowledge of their epidemiology remains scarce especially in western Asia and their recognition is still insufficient. We conducted a national study to estimate the prevalence of rheumatic diseases in Lebanon and to explore their distribution by geographic location, age, and gender.

Methods Using the Community Oriented Program for the Control of Rheumatic Diseases methodology, a random sample of 3530 individuals aged ≥15 years was interviewed. Positive respondents were evaluated by rheumatologists using the criterion of the American College of Rheumatology for the diagnosis of rheumatic diseases.

Results Prevalence rates of current and past musculoskeletal problems were 24.4% and 8.4% respectively. Shoulder (14.3%), knee (14.2%), and back (13.6%) were the most common pain sites. Point prevalence of rheumatic diseases was 15.0%. The most frequent types of rheumatic diseases were of mechanical origin, namely soft tissue rheumatism

(5.8%) and osteoarthritis (4.0%). Rheumatoid arthritis (1.0%) and spondylarthropathies (0.3%) constituted the most common inflammatory diseases. Coastal areas had the lowest prevalence of all diseases except for fibromyalgia. All diseases showed an increasing prevalence pattern with age and a higher prevalence among females than males.

Conclusion This is the first population based study on rheumatic diseases in Lebanon. The high burden calls for public and political attention for early detection, control and prevention. Point prevalence of individual diseases was within the range of results from other Community Oriented Program for the Control of Rheumatic Diseases surveys with some variations that can be attributed to differences in methodology and geo-ethnic factors.

P2-17 THE PREVALENCE OF METABOLIC SYNDROME AND RELATED FACTORS IN ÇANKAYA PROVINCE OF ANKARA, TURKEY

doi:10.1136/jech.2011.142976h.54

¹F Ozyurda, ¹N Atak,* ^{1,2}Z Biyikli. ¹Department of Public Health, School of Medicine, Ankara University, Ankara, Turkey; ²Department of Biostatistics, School of Medicine, Ankara University, Ankara, Turkey

Introduction The morbidity of metabolic syndrome (MS), which is composed of several interrelated metabolic risk factors, increases as the obesity increases. It is a condition of multiple metabolic risk factors which share the common etiopathogenesis of cardiovascular diseases and type 2 diabetes.

Methods The study was cross-sectional, and the study sample consisted of 961 participants above the age of 15 living in the households which were selected by 1/200 systematic random sampling method between 2000 and 2004. A questionnaire was administered to the participants, and blood pressure, fasting blood glucose, total cholesterol, triglyceride and lipoprotein levels were measured, and body mass indexes of the participants were calculated. For the definition of metabolic syndrome, the WHO's criterias were used. The test of χ^2 and multivariate logistic regression analysis was used in statistical analyses. The differences were considered to be statistically significant at p<0.05.

Results The MS prevalence was found to be 13.5%, and it changed significantly according to age, marital status, educational level, and job. Smoking, systolic and diastolic hypertension, elevated total cholesterol, LDL, and VLDL, caused the prevalence to increase significantly. According to the results of multivariate logistic regression analyses, the age above ≥45, total cholesterol HDL ratio above 5, the elevated total cholesterol, VLDL, and blood pressure were found to be the determinants of MS.

Conclusion To control metabolic syndrome, the implementation of prevention programmes including healthy life style such as encouraging healthy nutrition, physical activity, and control of blood pressure should be achieved.

P2-18 WHOLE GRAIN CONSUMPTION AND THE RISK OF COLORECTAL CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS OF COHORT STUDIES

doi:10.1136/jech.2011.142976h.55

¹D Aune,* ¹D Chan, ¹R Lau, ¹R Vieira, ²D Greenwood, ³E Kampman, ¹T Norat. ¹Imperial College London, London, UK; ²University of Leeds, Leeds, UK; ³Wageningen University and Research Centre, Wageningen, The Netherlands

Introduction Several case-control studies have suggested inverse associations between whole grain intake and colorectal cancer risk, but few cohort studies have been published on the subject. As part of the Continuous Update Project of the World Cancer Research Fund we conducted a systematic review and meta-analysis of whole grain intake and colorectal cancer risk.