3.3 NUTRITION

Chair: Prof. Mohsen Janghorbani, Iran

O3-3.1 EFFECTS OF LIFESTYLE AND DIET ON BODY MASS INDEX CHANGE AMONG MARRIED WOMEN IN INDIA

P Agrawal.* *IPPF, SARO, New Delhi, India*

Indian women suffer a very high burden of nutritional deficiency; but the prevalence of overweight and obesity are also on the rise. This study aimed to examine the effects of lifestyle and diet factors on change of Body Mass Index (BMI) in a longitudinal, community based sample of married Indian women.

325 women (15—49 years of age) were purposively chosen from 1998 to 1999 National Family Health Survey (NFHS-2) Delhi Samples and were followed-up after 4 years. Information on women's BMI, dietary habits and lifestyle was collected through structured and semi structured questionnaires. Effect of lifestyle (determined by high, medium and low sedentary lifestyle) and diet (frequency of consumption of several food items, and specific fatty / sugary items) on BMI change of >25% were estimated using multivariate logistic regression after adjusting for age, education, religion, ethnicity, household standard of living, and previous BMI status.

A high sedentary lifestyle (aOR 2.63; 95% CI 1.29 to 5.35) emerged as the main predictor of increase in BMI of women in the adjusted multivariate analysis even after controlling for all the possible confounders. However, previous BMI status was negatively associated with weight gain. Obese women were significantly less likely to gain more weight (aOR 0.26; 95% CI 0.11 to 0.65).

Consuming a diet high in sugar and fat and a high level of sedentary lifestyle was associated with larger gains in BMI among Indian women. More epidemiologic research with better measures of diet and lifestyle is needed to validate the findings in similar other settings.

O3-3.2 LOW VITAMIN D STATUS AND RISK OF TYPE 2 DIABETES: A PROSPECTIVE COHORT STUDY

[1]L Husemoen,* [1]B Thuesen, [1]C Glümer, [2]M Fenger, [1]T Jørgensen, [3]L Ovesen, [4]J Svensson, [5]K Borch-Johnsen, [1]A Linneberg. [1]*Research Centre for Prevention and Health, Glostrup, Denmark;* [2]*Department of Clinical Biochemistry, Hvidovre Hospital, Hvidovre, Denmark;* [3]*Deptartment of Medical Gastroenterology, Slagelse Hospital, Slagelse, Denmark;* [4]*Department of Pediatrics, Glostrup Hospital, Glostrup, Denmark;* [5]*Institute of Public Health, University of Sourthern Denmark, Odense, Denmark*

Introduction Low vitamin D status has been associated with higher risk of type 2 diabetes in cross-sectional studies. The evidence from prospective studies is limited. The aim was to examine the association between vitamin D status and risk of type 2 diabetes and markers of glucose homeostasis in a prospective cohort study.
Methods The study is part of the INTER99 study, based on a random sample of the general population of Copenhagen, Denmark. The current study included 6045 men and women aged 30—65 years at baseline (1999—2000). 4296 participated in the follow-up examination 5 years later (2004—2006). Data were collected with self-administered questionnaires, a physical examination, a 2 h oral glucose tolerance test, and various blood tests including measurement of serum 25-hydroxyvitamin D (25 (OH)D). Data were examined in multivariate logistic and linear regression models.
Results Low vitamin D status (25 (OH)D <25 nmol/l) was significantly associated with increased prevalence (OR 95% CI 1.62 (1.13 to 2.32)) and incidence (OR 95% CI 2.04 (1.38 to 4.17)) of diabetes compared to normal status (25 (OH)D ≥50 nmol/l). Moreover, low

vitamin D status was significantly associated with markers of glucose homeostasis (glucose, insulin, c-peptide, Haemoglobin A1c, and insulin resistance (assessed by the HOMA model and the BIGTT test)) as well as unfavourable changes in these during follow-up.
Conclusion Low vitamin D status was associated with increased risk of type 2 diabetes and markers of glucose homeostasis in a Northern European general population sample.

O3-3.3 ASSOCIATION OF LOW VITAMIN D LEVELS WITH INCREASED RISK OF STROKE IN OLDER ADULTS

[1]M Busch,* [1]C Scheidt-Nave, [2]U Thiem, [2]I Burghaus, [2]H J Trampisch, [3]S Meves, [4]K Berger, [1]G Mensink, [1]C Diehm. [1]*Robert Koch Institute, Department of Epidemiology, Berlin, Germany;* [2]*Department of Medical Informatics, Biometry and Epidemiology, University of Bochum, Bochum, Germany;* [3]*St. Josef Hospital, Department of Neurology, Bochum, Germany;* [4]*University of Muenster, Institute of Epidemiology and Social Medicine, Muenster, Germany;* [5]*SRH-Klinikum Karlsbad-Langensteinbach, Department of Internal Medicine / Vascular Medicine, Karlsbad, Germany*

Introduction Accumulating evidence suggests that Vitamin D deficiency may be a risk factor for cardiovascular disease but its association with the risk of stroke is uncertain.
Methods 25-hydroxyvitamin D (25 (OH)D) was measured in 6803 ambulatory primary-care patients aged ≥65 years (mean age 73 years; 58% women) who participated in the German Epidemiological Trial on Ankle-Brachial Index (getABI). Participants had their baseline assessment in October 2001 and were followed for stroke for up to 7 years.
Results During a mean follow-up of 5.7 years, 249 participants had a stroke (84% ischaemic), a stroke rate of 6.5 per 1000 person-years. The risk of stroke increased with decreasing baseline 25 (OH)D levels (p for trend across quartiles <0.001). Compared to participants in the highest 25 (OH)D quartile (>53.7 nmol/l), participants in the lowest quartile (<24.5 nmol/l) had twice the risk of any stroke (HR 1.99, 95% CI 1.35 to 2.92) and a 70% higher risk of ischaemic stroke (1.72, 1.13 to 2.61) in Cox proportional hazards models adjusting for age, sex, education, smoking status, body mass index, renal function, and prior stroke. Additional adjustment for conventional cardiovascular risk factors and cardiovascular disease at baseline slightly attenuated these associations (any stroke: 1.76, 1.19 to 2.60; ischaemic stroke: 1.49, 0.97 to 2.27). Results were similar when 310 participants with prior stroke were excluded.
Conclusion Low vitamin D levels were associated with an increased risk of stroke in this prospective cohort study. This association was independent of several important confounders and only partly explained by conventional risk factors and cardiovascular disease as potential causal intermediates.

O3-3.4 FRUIT AND VEGETABLES AND COLORECTAL CANCER RISK: A NON-LINEAR DOSE-RESPONSE META-ANALYSIS OF COHORT STUDIES

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

Introduction The association between fruit and vegetable intake and colorectal cancer risk has been investigated by many studies, but remains a controversial issue because of inconsistent results and weak observed associations. We summarise the evidence from cohort studies in categorical, linear and non-linear dose-response meta-analyses.
Methods We searched PubMed for studies of fruit and vegetable intake and colorectal cancer risk up to May 2010. Prospective studies that reported RR estimates and 95% CIs of colorectal cancer