HYPERTENSION AND OUTCOMES

SO027   ALBUMINURIA IN PREDICTION OF CARDIOVASCULAR MORTALITY. ONE VERSUS MULTIPLE URINE SAMPLES IN THE SECOND HUNT STUDY, NORWAY

Gudrun Hatlen1,2, Sofidir Romundstad3,4, and Stein Hallan1,2
1Department of Cancer Research and Molecular Medicine Faculty of Medicine, Norwegian University of Science and Technology (NTNU) Trondheim Norway, 2Department of Medicine, Division of Nephrology St. Olav University Hospital Trondheim Norway, 3Department of Internal Medicine Leverance Hospital Leverance Norway, 4HUNT Research Centre Faculty of Medicine, Norwegian University of Science and Technology (NTNU) Leverance Norway

Introduction and Aims: Albuminuria is an independent predictor of cardiovascular (CV) mortality, regardless of the presence of diabetes or hypertension. Still, only single urine samples are available in most previous studies and so far, there is no consensus of numbers urine samples needed for risk prediction. This study examined the impact of increasing numbers of urine samples at different albuminuria cut-off levels for prediction of long-term CV mortality.

Methods: In a prospective cohort study from the population-based Nord-Trøndelag Health Study (HUNT), Norway, we followed 9,158 adults with known diabetes, treated hypertension or randomly selected for 13 years. Albumin-to-creatinine ratios (ACR) in 3 morning urine samples were available from each participant. Adjusted hazard ratios (HR) for CV mortality on increasing number of positive ACR at different ACR cut-offs were assessed in Cox survival analyses, and predictive performance of models based on Framingham variables plus 1 versus 3 ACRs was evaluated.

Results: For levels above high-normal ACR range (i.e. cut-offs >1.0 mg/mmol), single urine sample was enough to demonstrate a significant association to CV mortality (HR 1.36, 95% CI 1.13-1.64, P = 0.001) in the total sample. This applied to all subgroups for cut-off levels >2.7 mg/mmol. For lower levels, 2 or 3 urine samples were needed for significance. There was neither improvement in discrimination (C-statistics 0.822 vs. 0.822, P=0.65) or calibration using 3 compared to 1 ACR value, nor did reclassification improve CV risk prediction (Net Reclassification Improvement 0.007 (-0.01-0.02)). However, considering ACR cut-offs below the high albuminuria ("microalbuminuria") range, multiple ACR measurements might be superior.

Conclusions: Single urine ACR measurement will, in most clinical situations, be sufficient for CV mortality risk evaluation, even as additional urine samples only improved diagnostic accuracy marginally.

SO028   MEDITERRANEAN DIET, KIDNEY FUNCTION, AND MORTALITY IN MEN WITH CHRONIC KIDNEY DISEASE

Juan J. Carrero1,2, Xiaoyan Huang1, José Jiménez-Moleón2, Bengt Lindholm1, Tommy Cederholm1, Johan Arnlov1,2, Ulf Risér1 and Per Sjögren1
1Divisions of Renal Medicine and Baxter Novum, Department of Clinical Science, Intervention, and Technology Karolinska Institutet Stockholm Sweden, 2Department of Preventive Medicine and Public Health, School of Medicine University of Granada Granada Spain, 3Department of Public Health and Caring Sciences, Clinical Nutrition and Metabolism Uppsala University Uppsala Sweden, 4Department of Public Health and Caring Sciences, Section of Geriatrics Uppsala University Uppsala Sweden, 5School of Health and Social Studies Dalarna University Falun Sweden, 6Center for Molecular Medicine Karolinska Institutet Stockholm Sweden

Introduction and Aims: A Mediterranean diet has been linked to reduced morbidity and mortality but in various populations but little is known with regard to kidney function in the community. We aimed to investigate whether adherence to a Mediterranean diet is associated with improved kidney function, cardiometabolic risk profile and reduced mortality risk in individuals with manifest chronic kidney disease (CKD).

Methods: Dietary habits were determined by 7-d dietary records in a population-based cohort of 11,10 Swedish men (age 70 y), 506 of whom were considered to have CKD because of a glomerular filtration rate ≤60 ml/min/1.73 m². A Mediterranean Diet Score (MDS) was calculated and participants categorized as low-, medium-, and high-adherents. Adequate reporters were identified with Goldberg cutoffs (n=597), and deaths were registered during a median follow-up of 9.9 years.

Results: As compared to low adherents, high adherents were 42% less likely to have CKD (adjusted OR 0.58, 95% CI (0.38-0.87), P for trend 0.04). During follow-up, 168 (33%) CKD individuals died. In these, no differences were observed regarding important cardiometabolic risk factors (BMI, waist circumference, blood pressure, blood lipids, glucose, insulin, inflammation or albumin) across adherence groups. In proportional hazards regression, a higher MDS adherence (every 2-point increase in MDS) was independently associated with 18% lower mortality risk. Sensitivity analyses showed stronger associations in individuals with adequate reported dietary intake.

Conclusions: Adherence to a Mediterranean-like dietary pattern correlates better renal function in the community. A greater adherence to this diet independently predicts survival in individuals with manifest CKD.

SO029   PREVALENCE OF HYPERTENSION AND LOW GFR IN OBESE CHILDREN: RESULTS OF A POPULATION BASED FIELD STUDY, THE CREDIT-C STUDY

Ali Duzova1, Fatras Yalincikaya2, Ozgur Soyuzmezoglu3, Esra Baskin4 and Aydin Biakaloglu1
1Department of Pediatric Nephrology Hacettepe University Faculty of Medicine Ankara Turkey, 2Department of Pediatric Nephrology Ankara University Faculty of Medicine Ankara Turkey, 3Department of Pediatric Nephrology Gazi University Faculty of Medicine Ankara Turkey, 4Department of Pediatric Nephrology Baskent University Faculty of Medicine Ankara Turkey

Introduction and Aims: Obesity has risen dramatically in the Western world. Hypertension, metabolic syndrome, hyperlipidemia, sleep disorders, and type 2 diabetes mellitus are weight-related disorders. In adults, obesity is associated with an increased risk of development and progression of kidney disease. Data at the epidemiological level are limited, both for children and adults. The aim of this study was to evaluate the effect of obesity on hypertension and glomerular filtration rate (GFR) among children in a field study in Turkey.

Methods: A population-based field study in which individuals were accessed by house visits throughout Turkey has been conducted (CREDIT-C). The study sample (3622 children; 5-18 years) was selected to represent Turkish population regarding to geographical region, gender and age (5 to 18 years). Obesity was defined as body mass index ≥25th percentile for age and gender. Schwartz formula was used to estimate GFR. Blood pressure (BP) percentile was determined according to age, gender and length.

Results: The prevalence of obesity, hypertension (≥95th percentile), and low GFR (<90ml/min/1.73m²) were 8.9%, 6.1% and 3.1%, respectively. GFR was <75ml/min/1.73m² in 0.8% of the study group. Logistic regression analysis revealed younger age, male gender and urban area as independent risk factors for obesity. GFR (ml/min/1.73m²) was decreased in obese children (127 ± 21.6 vs. 129 ± 23.1, p<0.001). Frequency of children with GFR <90 ml/min/1.73m² (4.9% vs. 2.8%) and GFR <75 ml/min/1.73m² (1.2% vs. 0.7%) were higher among obese children, compared to non-obese group. Obesity increased risk for hypertension (OR 2.61, 95%CI 1.71-3.98, p<0.001). Systolic and diastolic blood pressure z-scores were higher among obese children (p<0.001).

Conclusions: In this population-based field study we showed a remarkable prevalence of obesity in children and its association with hypertension, and low GFR in Turkey. Strategies for the prevention and management of obesity are also important for developing countries and for children. Long-term consequences of obesity during childhood in adult life merit further studies. The Study was supported by TUBITAK (The Scientific and Technological Research Council of Turkey).