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Changes of urinary albumin excretion and cardiovascular events: a meta-regression analysis of 32 randomized trials and 80,812 patients
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Background: The association between Urinary Albumin Excretion (UAE) and Cardiovascular (CV) risk has been well established. However, it has been not demonstrated whether regression of UAE is associated with reduced CV risk.

The aim of the current study was to evaluate the relationship between changes of UAE and cardiovascular clinical events. The influence of baseline patients’ characteristics, follow-up, study publication year, Detsky quality score, changes in blood pressure from baseline to the end of follow-up, degree of albuminuria, glomerular filtration rate, comorbidities and concomitant pharmaceutical treatments were also explored. Egger’s method was used to assess publication bias.

Results: 32 trials enrolling 80,812 participants were included. In meta-regression analysis, a relationship between UAE changes and clinical end-points. The influence of baseline patients’ characteristics, follow-up, study publication year, Detsky quality score, changes in blood pressure from baseline to the end of follow-up, degree of albuminuria, glomerular filtration rate, comorbidities and concomitant pharmaceutical treatments were also explored. Egger’s method was used to assess publication bias.

Conclusions: In diabetic and/or hypertensive patients, a decrease in UAE is associated with reduced risk of myocardial infarction, ischemic stroke and all-cause mortality.

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Coronary microvascular dysfunction in patients with acromegaly: a hint for their increased cardiovascular risk

Purpose: Acronegaly (AC) increases the risk of cardiovascular diseases. We evaluated Coronary Flow Reserve (CFR) by Transthoracic Doppler Echocardiography (TDE), as an index of coronary microvascular function, in AC.

Methods: 39 AC patients (pts) (22 M, aged 52±11 years) without clinical evidence of heart disease, and 48 controls matched for age and gender were studied. Coronary flow velocity in the left anterior descending coronary artery was detected by TDE at rest and during adenosine infusion. CFR was the ratio of hyperemic Diastolic Flow Velocity (DFV) to resting DFV. A CFR<2.5 was considered abnormal. The median time between the onset of symptoms and CFR assessment was 5 years (interquartile range 2-10 years).

Results: In AC pts, CFR was lower than in controls (2.6±0.8 vs 3.8±0.7, p<0.0001) (Figure A). CFR was inversely related to insulin-like growth factor 1 (IGF-1) levels (r=-0.52, p=0.001) and both CFR<2.5, IGF-1 was higher (756 [381-898] vs 246 [186-484] mUI, p<0.004) while growth hormone (GH) levels were similar (6.3 [2.8-13.7] vs 5 [2.8-8.9] mUI, p=0.8). At multivariable analysis adjusted for age, gender and other cardiovascular risk factors, IGF-1 was an independent determinant of CFR (b=0.527, p<0.0001) and a predictor of CFR<2.5 (p=0.01).

Conclusions: Microvascular function is impaired in AC and is correlated with IGF-1 independently of GH levels, suggesting a negative effect of IGF-1 on coronary microcirculation that may contribute to the increased cardiovascular risk in AC.

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Associations between being obese but metabolically healthy and risk of myocardial infarction, stroke and mortality - a nationwide study of fertile women
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Purpose: Obese middle-aged men without metabolic disturbances have recently been found to carry the same cardiovascular risk as their normal weight, metabolically healthy counterparts. In this setting we examined the risk of myocardial infarction, ischemic stroke and all-cause mortality in a large population of young fertile women.

Methods: From nationwide registers of birth records we identified all Danish women giving birth in the period 2004-2010. Metabolically unhealthy was defined as the presence of either a hypertensive disorder (gestational hypertension, preeclampsia, hypertension), an abnormal glucose metabolism (gestational diabetes, diabetes) or dyslipidaemia. Four exposure groups were defined according to metabolic health status and pre-pregnancy body mass index (BMI): Metabolically healthy and BMI <25 kg/m² (1) or BMI ≥25 kg/m² (2); metabolically unhealthy and BMI <25 kg/m² (3) or BMI ≥25 kg/m² (4), respectively. Using Poisson regression models adjusted for age and calendar year, the risk of the combined end-point of myocardial infarction, ischemic stroke and all-cause mortality was assessed with (1) as reference.

Results: The population consisted of 273,101 women with a mean age of 31.2 (SD 4.9) years and a median follow-up of 5.5 years (IGR 3.8-6.8). In the normal weight metabolically healthy women (1) the incidence rate (IR) per 1000 person years for the combined endpoint was 0.41 (95% confidence interval [CI] 0.37-0.45, number of events, n=370). For the obese but metabolically healthy women (2) the IR was 0.45 (CI 0.39-0.52, number of events, n=11) and rate ratio (RR) was 1.16 (CI 0.93-1.33). In the normal weight but metabolically unhealthy women (3) the IR was 0.91 (CI 0.69-1.2, number of events, n=175) and RR was 2.11 (CI 1.58-2.83). The IR for the obese and metabolically unhealthy women (4) was 1.25 (CI 1.01-1.54, number of events, n=86) and the RR was 2.81 (CI 2.22-3.56).

Conclusions: In a nationwide low risk population of young fertile women being obese but metabolically healthy confers a similar risk of myocardial infarction, stroke and all-cause mortality compared to normal weight, metabolically healthy women, while metabolically unhealthy women had increased risk of MI, stroke and all-cause mortality irrespective of BMI.

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Depression symptoms and the progression of carotid intima-media thickness: a 5-year follow-up study
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Background: Only a few studies have investigated the changes in carotid intima-media thickness (IMT) over time, and uncertainties remain on the underlying mechanisms linking depression and subclinical atherosclerosis. We carried out a prospective cohort study to evaluate whether depression is associated with changes in carotid IMT in subjects with cardiac risk factors but free from coronary heart disease (CHD), and to what extent the atherogenicity of depression can be explained by inflammatory markers and autonomic nervous system dysfunction. Methods and results: During baseline and 5-year follow-up visits; all subjects were asked to provide blood samples and compile a structured questionnaire; trained physicians assessed depression symptoms using Beck Depression Inventory (BDI); altered cardiac autonomic tone was measured using time-domain components of heart rate variability in 24h Holter recordings; measurements of carotid IMT were carried out using B-mode ultrasound image acquisition. Logistic and linear regression analyses were used to adjust for potential confounders and explore potential mediators. A total of 381 subjects completed the 5-year follow-up.

The mean carotid IMT significantly increased in all subjects but the amount of increase was significantly larger among subjects with depression symptoms: mean IMT increased by 0.16±0.14 mm, 0.31±0.28 mm and 0.61±0.54 mm and a BMI ≥25 kg/m² (3) or BMI ≥25 kg/m² (4), (respectively. Using Poisson regression models.

Conclusion: Depression symptoms are independently associated with an accelerated progression of carotid IMT in subjects with CHD risk factors, and inflammation may substantially modulate the association between depression and carotid IMT progression.