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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.

Methods: The MEDLINE, Cochrane, ISI Web of Science and SCOPUS databases were searched for articles about UAE until October 2012. Randomized trials assessing UAE at baseline and at the end of follow-up, enrolling more than 200 hypertensive and/or diabetic patients and reporting clinical end-points (all-cause death, Myocardial Infarction (MI), stroke and CV death) were included in the study. Meta-regression analysis was performed to test the 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 pharmacological 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 from baseline to end of follow-up and risk MI (change in Tau^2 (I2)=2.74; 7 Tau=0.011, stroke (I2=2.35; p=0.030) and CV events (including MI, stroke and CV death) (I2=3.74; p=0.001) was found. Results were confirmed by sensitivity analysis. No heterogeneity among studies or publication bias were detected.

Conclusions: In diabetic and/or hypertensive patients, a decrease in UAE is associated with reduced risk of MI, stroke and the composite of MI/stroke/CV death. These findings may have implications for monitoring CV risk in clinical practice.

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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 CHD risk factors, and inflammation and afferent 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 followed 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 for the subjects with no, mild and moderate/severe depression, respectively (all p<0.01). The association between moderate/severe depression and IMT increase remained highly significant even after controlling for all the variables considered, however when both IL-6 and CRP were included in multivariate models the regression coefficient decreased by 42.3%. Some of the inflammation markers and afferent autonomic nervous system dysfunction were also independently correlated with carotid IMT increase.

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.