Prevention

CHANGES OF ALBUMIN URINARY EXCRETION PREDICT CARDIOVASCULAR AND MORTALITY RISK: A META-REGRESSION ANALYSIS OF 32 RANDOMIZED TRIALS IN 80,812 PATIENTS

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Background: Several studies have reported the association between renal dysfunction and the risk of cardiovascular (CV) events and mortality. 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 induced by pharmacologic therapies and CV events and mortality.

Methods: the MEDLINE, Cochrane, ISI Web of Science and SCOPUS database were searched for articles about UAE in diabetic and hypertensive patients 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 CV clinical end-points (all-cause death, myocardial infarction, cerebrovascular accidents 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, AUE at baseline, glomerular filtration rate, degree of albuminuria, comorbidities and concomitant pharmacological treatments were also explored. Mecaskill’s modified test was used to assess publication bias.

Results: 32 trials enrolling 80812 participants were included in the analysis. A relationship between UAE changes from baseline to end of follow-up and risk of MI (change in Tau2 (t)=2.74; p-Tau (p)=0.011), stroke (t=2.35; p=0.030) and CV events (including MI, stroke and CV death)(t=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 and stroke, indicating that UAE monitoring represents a valuable therapeutic target in high risk patients.