

Smoking and smoking cessation

Adiponectin and mortality in smokers and non-smokers of the Ludwigshafen Risk and Cardiovascular Health (LURIC) Study

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Question: Cardiovascular diseases (CVD) are an important cause of morbidity and mortality worldwide. Decreased concentrations of adiponectin have been reported in smokers and it has been proposed that an K-ATP transporter might be involved in the downregulation. Aim of our study was to analyze the effect of cigarette smoking on the concentration of adiponectin and potassium in active smokers (AS) and life-time non-smokers (NS) of the Ludwigshafen Risk and Cardiovascular Health (LURIC) Study as well as their use for risk prediction.

Methods: Smoking status was assessed by a questionnaire and measurement of plasma cotinine concentration. Adiponectin serum concentrations were measured by ELISA (Biovendor Laboratory Medicine Inc., Brno, Czech Republic). Adiponectin was binned into tertiles separately for AS and NS and Cox regression was used to assess the effect on mortality.

Results: Seven-hundred-seventy-seven from LURIC patients were AS and 1178 NS. Within 10 years (median) of follow-up 221 AS and 302 NS died. In unadjusted analyses AS had lower concentrations of adiponectin and a higher concentration of potassium. However, after adjustment for age and gender only the difference in potassium concentration remained significant while there was no significant difference in adiponectin concentration anymore. In a Cox regression model adjusted for age and gender adiponectin was significantly associated with mortality only in AS with a HR (95% CI) of 1.60 (1.14-2.24) per 1-SD increase but not in NS (Figure 1AB). In a model additionally adjusted for the risk factors diabetes mellitus, hypertension, coronary artery disease, BMI, LDL-C and HDL-C adiponectin was significantly associated with mortality with HR of 1.83 (1.28-2.62) and 1.56 (1.15-2.11) for AS and NS, respectively (Figure 1CD). Potassium was not associated with mortality, neither in NS nor in AS, and did not modulate the association of adiponectin and mortality.

Conclusions: Increased adiponectin is a strong and independent predictor of mortality both in NS and AS and its determination could be used to identify individuals at increased risk.

Figure 1

