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Smoking cessation predicts amelioration of microalbuminuria in newly diagnosed type 2 diabetes mellitus: a 1-year prospective study

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Abstract

The objective of the study was to assess the effect of smoking cessation on microalbuminuria in subjects with newly diagnosed type 2 diabetes mellitus (DM). From 500 smokers newly diagnosed with type 2 DM and microalbuminuria, only 193 (96 men/97 women; age, 56.4 ± 7.8 years) agreed to participate and were educated on smoking cessation, diet, and exercise. Pharmacological interventions were not different among the studied groups. All subjects were contacted by phone monthly with emphasis on smoking cessation. Anthropometric, biochemical parameters and urine specimens were obtained at baseline and at 12-month follow-up. *Microalbuminuria* was defined as an albumin to creatinine ratio of 30 to 299.9 μg/mg creatinine. Ankle brachial pressure index was determined by ultrasound. A total of 120 (62.2%) subjects quit smoking. Prevalence of microalbuminuria was reduced at 1 year to 72.6% in the subjects who quit smoking and to 22.5% in those who continued smoking ($P = .015$). Multivariate logistic regression analysis demonstrated that independently associated with the reduction in albumin to creatinine ratio (84.8 vs 28.7 μg/mg creatinine) were amelioration of glycemic control ($P < .001$), blood pressure ($P = .02$), dyslipidemia ($P = .02$), and insulin resistance ($P = .05$). Smoking cessation also reduced the prevalence of peripheral vascular disease ($P = .03$) and neuropathy ($P = .04$). From the pharmacological and lifestyle interventions, smoking cessation had the highest and an independent contribution to the reduction of microalbuminuria ($P < .001$). Smoking cessation in newly diagnosed type 2 DM patients is associated with amelioration of metabolic parameters, blood pressure, and the reduction of microalbuminuria. Stricter counseling about the importance of quitting smoking upon type 2 DM diagnosis is necessary to protect against the development of diabetic nephropathy and vascular complications.