Carotid intima-media thickness in type 1 diabetes mellitus

Tip 1 diyabetes mellituste karotis intima-media kalınlığı

Diabetes is an important disease because it is a chronic progressive disorder and leading cause of cardiovascular and renal complications. It is classified simply according to the existence of the insulin and its relatives, but the pathogenesis of diabetes is complex. At that point, the need to understand its etiology and to develop preventive strategies for diabetes and its complications makes the medical, economic, and sociological aspect of the disease important.

In the study (1) published in the current issue of the journal authors pointed out diabetic microvascular complication is related with atherosclerosis. The increased carotid intima-media thickness (CIMT) was associated with presence of proliferative retinopathy, macroalbuminuria, increased urinary albumin excretion, and duration of diabetes.

However, there are some issues need to be discussed. Methods and criteria for diabetes mellitus and fasting plasma glucose values used in this paper should be updated. In November 2005, WHO and International Diabetes Federation Technical Advisory Group reviewed and updated the current guidelines for the diagnosis and classification of diabetes. So, the criteria for diagnosing diabetes mellitus (DM) as defined in reference 8 (National Diabetes Data Group. Classification and diagnosis of diabetes mellitus and other categories of glucose intolerance. Diabetes 1979; 28: 1039-57) and the fasting plasma glucose cut-point for impaired fasting glucose (from the cited reference: diagnosis of DM fasting blood glucose >140 mg/dl etc.) would not be up-to-date.

In the study, there are no cases with advanced level of nephropathy or retinopathy. At this point, some questions come to mind: Is there a selection bias, a problem in randomization or are all patients lucky? But, none of these had been declared as inclusion criteria. There is no explanation about the "number of the complications" as shown in Table 2. The exact definition should be provided and supported by literature.

Another conflicting point of paper is "references 10". This literature does not contain definition of "urine albumin excretion" as authors stated.

Authors also have to explain the severity of complication and quantification. Authors' classification method is not feasible for correlation analysis. Correlation analysis can only be used for data's that show difference between groups. Authors found correlation with age but there was no difference between groups in terms of age. Authors should explain what they stated; such as "smoking may progress CIMT in healthy subjects but not in type 1 DM" and "correlation between age and CIMT in both groups".

Results of this study are well known and widely documented in more powerful studies including larger study groups; The frequency of renal or retinal involvement in diabetes (2-4), significant association between retinopathy and CIMT (5), progression promoters for diabetic nephropathy (4, 5). The results of this study including only 113 patients with type 1 diabetes would not be new for the reader.

Readers should be reminded that 30% of type 1 DM patients have nephropathy, and are at increased risk of end-stage renal disease and early cardiovascular mortality (6, 7). Different diagnostic criteria for DM have been proposed by different international organizations. In this study, authors used the criteria of "National Diabetes Data Group" (NDDG, 1979), but more updated criteria were defined by "American Diabetes Association" (ADA, 1997) and "World Health Organization" (WHO, 1999) (8, 9). Microvascular complications are retinopathy, nephropathy, neuropathy (sensory, including history of foot lesions; autonomic, including sexual dysfunction and gastroparesis) and macrovascular complications are coronary heart disease, cerebrovascular disease, peripheral arterial disease. Microalbuminuria is also a well-established marker of increased cardiovascular disease risk (9). Patients with microalbuminuria who progress to macroalbuminuria (300 mg/24 h) are likely to progress to end-stage renal disease (11).

Though, the results are not entirely new, the study contributes to the current knowledge on the factors associated with increase in carotid-intima media thickness in type 1 diabetes mellitus.

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