Prevention of Cardiovascular Complications of Diabetes Mellitus by Aspirin

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ABSTRACT

Eighteen million Americans have type 2 Diabetes Mellitus (DM) while another 40 million have impaired glucose tolerance. Atherosclerotic heart disease is the leading cause of death in patients with diabetes mellitus. In addition to the increased risk for CardioVascular Disease (CVD), patients with diabetes have a worse prognosis than non-diabetics when they suffer an ischemic event. Insulin resistance is increasingly recognized as a chronic, low-level, inflammatory state. Hyperinsulinemia has been proposed as the forerunner of hypertension, low high-density lipoprotein cholesterolemia, hypertriglycerideremia, abdominal obesity, and altered glucose tolerance, linking all these abnormalities to the development of coronary vascular disease. Atherosclerosis and insulin resistance share similar pathophysiological mechanisms, due to the actions of proinflammatory cytokines. The dynamic inflammatory milieu found in diabetes explains the susceptibility of diabetics to CVD and the potential mechanism by which aspirin may prevent CVD in diabetics. Aspirin decreases the risk for CVD in diabetic patients by a variety of established and novel mechanisms. Therapeutic strategies that lesson the CVD risk in diabetic patients, including the use of aspirin for primary and secondary prevention, are potentially very important. This review article addresses the antiatherosclerotic effects of aspirin, the potential anti-diabetic effects of aspirin, and the clinical trial evidence for CVD prevention by aspirin in diabetics. We also present recommendations for the use of aspirin in the diabetic population and the current guidelines put forth by the American Heart Association and by the American Diabetes Association.