

**EDITORIAL****ASPIRIN IN PRIMARY PREVENTION OF  
CARDIOVASCULAR EVENTS IN DIABETICS**

Aspirin universally recommended for secondary prevention of Cardiovascular (CV) events in patients, who have suffered a myocardial infarction, Ischaemic Stroke or suffers from Peripheral vascular disease (PVD). Aspirin in low doses has also been recommended for primary prevention in certain population, at high risk of CV events. Cardiovascular events are major cause of morbidity and mortality in patients with diabetes. In patients with Diabetes the risk of fatal coronary artery disease is same as the risk associated with a history of myocardial infarction in patients without diabetes<sup>1</sup>.

Diabetic patients are referred to as CAD equivalent and as such considered high risk (i.e. >20%10-year CVD risk). With that in mind, should 25 year old diabetics automatically be considered high risk and be given daily aspirin for primary prevention? The current guideline by the American Diabetic Association suggests daily aspirin for diabetics at higher risk for CVD, such as >40 years old, family history, hypertension, smoking, dyslipidemia, albuminuria. Between the age of 30-40 there is no clear answer, and those under 30 years of age have never been studied.

In some of the earliest studies of aspirin in primary prevention, the percentage of patients with diabetes ranged from 1% or 2% to 22%, while cardiovascular event rates were very high. As a result, in contemporary studies, where event rates are much lower because of improvements in overall therapy, it is difficult to assess the benefit of aspirin in primary prevention because there is only a modest reduction in events with treatment.

Role of Aspirin in primary prevention of cardiovascular events in diabetes has not been systematically studied. There is interest and controversy in daily use of aspirin for primary prevention in diabetics who have yet to demonstrate clinical evidence of cardiovascular diseases.

In Antithrombotic Treatment Trialists' (ATT) collaboration meta-analysis, 4000 diabetic patients were included from six clinical trials, the researchers found that aspirin reduced the risk of vascular events 12%, with the largest reduction in nonfatal MI<sup>2</sup>.

In the Physicians' Health Study, aspirin use reduced the risk of myocardial infarction in patients with diabetes from 10 percent to 4 percent during five years of follow-up<sup>3</sup>.

In the Early Treatment Diabetic Retinopathy Study, a randomized trial involving 3711 patients with diabetes and nonproliferative or early proliferative retinopathy, myocardial infarction tended to be less frequent among subjects randomly assigned to receive 650 mg of aspirin per day than among those assigned to placebo<sup>4</sup>.

Japanese Primary Prevention of Atherosclerosis with Aspirin for Diabetes (JPAD) and the Prevention of Progression of Arterial Disease and Disease (POPADAD), included diabetic patients only and did not detect a significant benefit of aspirin in reducing atherosclerotic events (hazard ratio = 0.80; 95% confidence interval [CI], 0.58 to 1.10; P = .16; hazard ratio = 0.98; 95% CI, 0.76 to 1.26; P = .86)<sup>5,6</sup>.

A more recent meta-analysis of the primary prevention trials focusing on patients with diabetes also did not detect a reduction in the risk of major cardiovascular events associated with aspirin therapy (relative risk = 0.90; 95% CI,

0.81 to 1.00)<sup>7</sup>. Most of the benefit is offset by higher incidence of haemorrhages, both haemorrhagic Strokes and GI bleed.

American Diabetes Association (ADA), American Heart Association (AHA), and American College of Cardiology (ACC) task force recently issued a statement recommending that only men older than 50 and women older than 60 who have one or more additional major risk factors should be treated with aspirin for primary prevention of cardiovascular events and are at an increased 10-year risk of cardiovascular events<sup>8</sup>. Low dose Aspirin, 75mg to 162mg per days is recommended for Diabetes, who have no history of Cardiovascular disease, but are at high risk, based on age along with at least one additional risk factor.

In conclusion generalized use of aspirin for primary prevention in diabetics is not warranted. Risk and benefit should be analyzed and only patients who are at high risk of developing cardiovascular disease and have other risk factors like smoking, hypertension, dyslipidemia, family history of disease or chronic kidney disease should be given aspirin for primary prevention. Aspirin is not recommended for high risk diabetics who are also at risk of bleeding. It is also not recommended for patients at low risk of cardiovascular events.

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