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## Aspirin Use in Newly Diagnosed Diabetics May Be Cost-Effective, but the Practice Remains Controversial

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March 25, 2010 — Patients with newly diagnosed type 2 diabetes who take aspirin can gain an average of nearly 4 months of life for an incremental cost of less than \$2000, according to a study published online March 23 in *Diabetes Care*.

The risk of developing cardiovascular disease (CVD) is 2 to 4 times greater for those with diabetes. To prevent CVD, the American Diabetes Association recommends aspirin therapy for diabetics older than 40 years. Its guidelines support the use of aspirin for everyone older than 30 years with an elevated risk for CVD if they can tolerate the drug. Prior research has analyzed the cost-effectiveness of aspirin for warding off CVD among the overall population.

"These studies concluded that aspirin use was cost-saving or cost-effective," write Rui Li, PhD, from the Division of Diabetes Translation, Centers for Disease Control and Prevention, Atlanta, Georgia, and colleagues. "It is not known if the same conclusion holds for persons with diabetes."

The study was designed to document the cost-effectiveness during a lifetime of aspirin therapy (80 mg daily) in those aged 40 years and older with a recent type 2 diabetes diagnosis. Researchers used a validated cost-effectiveness model to simulate type 2 diabetes' progression and its complications: nephropathy, neuropathy, retinopathy, coronary heart disease, and stroke. The model projects the patients' costs for standard care and for standard care plus aspirin from diagnosis until death, or until the age of 94 years.

According to the model, those with type 2 diabetes who used aspirin live longer for a relatively low expense.

- Patients undergoing aspirin therapy achieved 0.31 life years (LYs) or 0.19 quality-adjusted LYs (QALYs).
- The gain came at an incremental cost of \$1700.
- Aspirin use had an incremental cost-effectiveness ratio of \$5428 per LY gained, or \$8801 per QALY gained.
- For women, the incremental cost-effectiveness ratio was \$13,833/QALY compared with \$5752 in men, or \$22,259/QALY vs \$3633, respectively, depending on study parameters.

Patients receiving aspirin lowered their cumulative incidence of coronary heart disease events by 3.91%, reducing the rate of deaths from coronary heart disease by 4.65%. However, subjects' cumulative incidence of stroke increased by 0.51%, elevating the stroke mortality rate by 0.28%.

Although the investigators concluded that ongoing aspirin therapy is cost-effective, they did not find it to be cost-saving.

"First, aspirin's effect on gastrointestinal bleeding increased the total medical costs of the group taking aspirin. Second, the aspirin treatment group lived longer and required additional resources for treatment of diabetes and hypertension," the authors write. "Third, aspirin treatment affects diabetes macrovascular complications but not microvascular ones."

Two limitations to the study were noted by the researchers: the effectiveness of aspirin in those with diabetes has not been fully established, and the cost-effectiveness model is rooted in the simplification of hypotheses, as are all models.

The use of aspirin to ward off CVD is still controversial and merits further study, according to the investigators. In 2 large, randomized trials recently published in the *Journal of the American Medical Association* and the *British Medical Journal*, respectively — namely, the Japanese Primary Prevention of Atherosclerosis with Aspirin for Diabetes trial and the Prevention of Progression of Arterial Disease and Diabetes trial — low-dose aspirin use in this



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population did not prevent cardiovascular events.

"Future clinical trials are needed to better understand if aspirin is efficacious for people with type 2 diabetes; additional cost-effectiveness analyses, accounting for these studies, might be needed," the authors write.

The Centers for Disease Control and Prevention supported the study. The study authors have disclosed no relevant financial relationships.

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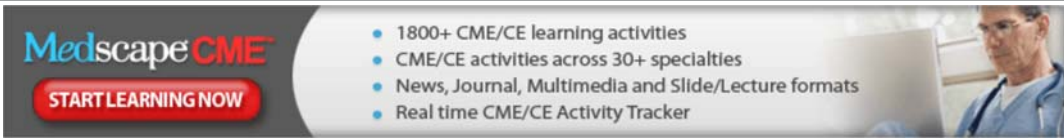
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