

Type 2 Diabetes Screening Found Cost Effective

BY MELINDA TANZOLA

Type 2 diabetes screening is cost effective when started between the ages of 30 and 45 years and repeated every 3-5 years, according to a mathematical model.

According to the model, which simulated the effects of various screening strategies in a population of 325,000 nondiabetic 30-year-olds representative of the U.S. population, repeated routine screening would offer significant benefits over no screening, including reducing rates of myocardial infarction and diabetes-related microvascular complications (legal blindness, end-stage renal disease, or amputations) by three to nine events per 1,000 people each, and increasing the number of quality-adjusted life-years (QALY) by more than 50 years.

Screening would have a negligible effect on the incidence of stroke (preventing up to one event per 1,000 people), though most of the strategies evaluated in the study would prevent an estimated two to five deaths per 1,000 people (Lancet 2010 March 30 [doi:10.1016/S0140-6736(09)62162-0]).

In their study, Dr. Richard Kahn and his colleagues evaluated eight screening scenarios that included different starting ages (30, 45, or 60 years), different screening intervals (every 6 months, yearly, every 3 or 5 years), and strategies of screening the entire population versus screening only patients who reach a certain blood pressure threshold. There also was a control group.

All screening strategies reduced the time that individuals remained undiagnosed before the development of symptoms. The lead-time gained with each strategy over no screening ranged from 1.8 years for screening starting at age 60 years to 6.3 years for screening starting at age 30 years.

The investigators calculated the costs of these screening strategies using the Archimedes model, a large-scale, person-by-person model that incorporates physiology, disease, and health care system costs.

The cost-effectiveness of the strategies was reported in terms of cost per QALY, which factors in the duration individuals spend with a diabetes-related disorder and the estimated negative impact for each disorder.

Five of the eight strategies cost \$10,500 or less per QALY, but differed in their benefit. "The appropriate choice of strategy would deliver the greatest benefit, while having a low cost per QALY," explained Dr. Kahn, chief scientific and medical officer of the American Diabetes Association, and his coinvestigators. Therefore, they recommended starting screening at 30 or 45 years of age and repeating every 3-5 years.

Dr. Kahn and his associates noted that this type of age-specific screening would provide more than twice the QALY benefit of screening, because the cost of the office visit would be attributed to the visit for hypertension management.

In an editorial, Dr. Guy Rutten noted that these opportunistic screening strategies did carry the lowest cost per QALY. The current study "provides further evidence that screening for diabetes should be combined with screening for hypertension and lipid tests," concluded Dr. Rutten of the University Medical Center Utrecht in the Netherlands (Lancet 2010 March 30 [doi:10.1016/S0140-6736(10)60455-2]).

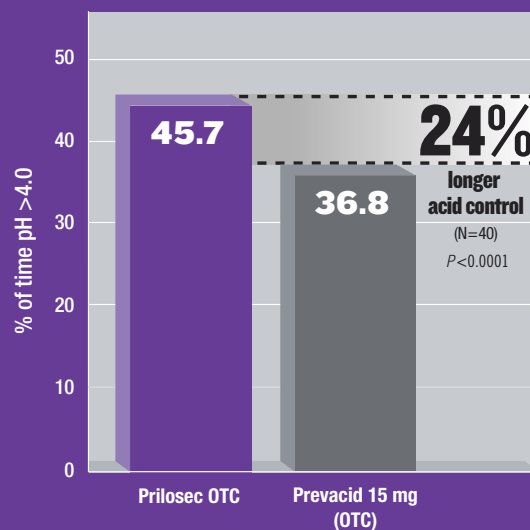
Although this is not the first cost-effectiveness study to be done in diabetes, Dr. Kahn and his associates said, this analysis provides new information based on several factors: It incorporates sequential, rather than one-time, screening; it is based on a representative sample of the population in the United States; it assumes that patients with diabetes will receive treatment according to the most recent recommendations; it

evaluates a range of screening strategies; and it utilizes the Archimedes model, which has been validated in epidemiologic studies. ■

Disclosures: Funding for the study was provided by Novo Nordisk, Bayer Pharmaceuticals, and Pfizer. Dr. Kahn and his associates said they had no conflicts of interest. Dr. Rutten also reported having no conflicts of interest.

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