

Cholesterol lowering is cost-effective in high-risk elderly

Clinical question What is the cost-effectiveness of pravastatin (Pravachol) treatment in high-risk patients aged 65 to 75 years?

Bottom line From the viewpoint of a health system, it is cost-effective to treat high-risk patients older than 65 years with pravastatin no matter what their initial cholesterol level. The increased cost of treatment is partially offset by savings in other areas. This analysis did not take into account any effect on the quality of the life extension by pravastatin. (Level of evidence = 2c)

Tonkin AM, Eckermann S, White H, et al, for the LIPID Study Group. Cost-effectiveness of cholesterol-lowering therapy with pravastatin in patients with previous acute coronary syndromes aged 65-74 years compared with younger patients: results from the LIPID study. *Am Heart J*. 2006;151:1305-1312.

Synopsis The Australian researchers conducting this study used data from the LIPID study conducted in the early 1990s to estimate the relative cost of treating high-risk patients with pravastatin to lower their risk of mortality and hospitalization. The perspective was from the viewpoint of the healthcare system. The 9,014 patients had a history of either MI or unstable angina, had a cholesterol level ranging from 115 to 271 mg/dL (4.0-7.0 mmol/L), and were randomly treated with placebo or pravastatin 40 mg daily for 6 years. This analysis evaluated the cost-effectiveness of the treatment in patients between the ages of 65 and 75 years as compared with patients younger than 65 years. To determine cost, the authors used actual data on hospitalizations, office visits, diagnostic tests, nursing home stays, and medications, expressed in Australian dollars and reflecting costs to the Australian healthcare system. The researchers did not evaluate the effect of treatment on quality of life. The analysis was based on a decrease in all-cause mortality from 20.6% to 16.3% in older patients and from 9.8% to 7.5% in younger patients. This translates into an additional 4.7 to 4.8 months of life in the average patient. The average cost per patient for treatment was \$4,792 for older patients and \$4,989 in younger patients. These costs were somewhat offset in both groups by decreases in the costs of other medications and of hospitalizations, and other costs. The overall additional cost of treatment was lower for older patients (\$2,140 for older patients, \$3,539 for younger patients). For every 1,000 patients aged 65 to 74 years, pravastatin treatment for 6 years prevented 43 deaths at a cost of \$2.1 million, or \$55,474 per life saved. In the younger patient group, 31 deaths were prevented at a cost of \$3.5 million, or \$167,161 per life saved. These estimates were not adjusted for quality of life.

Varenicline reduces nicotine dependence

Clinical question Is varenicline (Chantix) more effective than bupropion and placebo for smoking cessation?

Bottom line Varenicline therapy for 12 weeks is significantly more effective than placebo at maintaining smoking abstinence at 52 weeks. Varenicline may also be marginally more effective than bupropion SR. Reported success rates are likely to be higher than those in real-world settings. (Level of evidence = 1b)

Gonzales D, Rennard SI, Nides M, et al, for the Varenicline Phase 3 Study Group. Varenicline, an $\alpha 4\beta 2$ nicotinic acetylcholine receptor partial agonist, vs sustained-release bupropion and placebo for smoking cessation. A randomized controlled trial. *JAMA*. 2006;296:47-55.

Synopsis Varenicline is a nicotinic acetylcholine receptor partial agonist that may reduce the addictive effects of nicotine. The investigators randomized (concealed allocation assignment) 1,025 generally healthy adult smokers, aged 18 to 75 years, to receive varenicline (titrated to 1 mg twice daily), bupropion SR (titrated to 150 mg twice daily), or matching placebo for 12 weeks. All subjects received brief counseling and a self-help booklet for smoking cessation. Participants who completed the

initial 12-week drug treatment period continued in a nondrug posttreatment follow-up phase for 52 weeks. Smoking cessation was determined by patient self-report and an exhaled carbon monoxide measurement. All individuals assessing outcomes remained blinded to treatment group assignment. The 52-week study completion rates were 60.5% for varenicline, 56% for bupropion SR, and 54% for placebo. Overall, using intention-to-treat analysis, continuous abstinence rates at 52 weeks were significantly higher for varenicline vs placebo (21.9% vs 8.4%; number needed to treat [NNT] = 7; 95% confidence interval, 4-15). The difference in quit rates at 52 weeks between varenicline and bupropion (21.9% vs 16.1%) was not statistically significant. When reporting 52-week success rates (cumulative abstinence), the authors eliminated patients who failed for the previous reporting period. Therefore, the success rates at the end of 52 weeks reflected only those participants who were abstinent at 24 weeks. Thus, the overall success rates appear higher than if they had used every participant who began the study. Adverse events were similar for both varenicline and bupropion SR; nausea was the most common adverse event associated with varenicline. Mean weight gain and drop-out rates due to adverse events occurred similarly among all three groups. No sex differences in efficacy for varenicline were reported. The cost for 12 weeks of treatment with varenicline is similar to that of generic bupropion SR (\$396 vs \$372, respectively, at a local pharmacy in Charlottesville, Va). An identically designed study conducted at another site published in the same issue (*JAMA*. 2006;296:56-63) found similar results, except that the difference in abstinence rates at 52 weeks between varenicline and bupropion SR was statistically significant (23% vs 14.6%; NNT = 12, 6-43). In a third study reported in the same issue (*JAMA*. 2006;296:64-71), smokers who achieved abstinence at the end of 12 weeks of varenicline treatment and were then randomized to an additional 12 weeks of varenicline (instead of placebo) showed a significantly higher continuous abstinence rate at 52 weeks of follow-up (43.6% vs 36.9%; NNT = 14, 8-73). None of the subjects enrolled in any of the trials had a history of previous bupropion therapy, so success rates for varenicline in patients who have failed bupropion therapy are unknown.

Rapid A1C testing does not influence outcomes or cost

Clinical question Does a rapid assay for glycosylated hemoglobin (A1C) improve outcomes and save money?

Bottom line Rapid testing of A1C in office settings does not save money or improve glycemic control compared with usual care. (Level of evidence = 2b)

Khunti K, Stone MA, Burden AC, et al. Randomised controlled trial of near-patient testing for glycosylated haemoglobin in people with type 2 diabetes mellitus. *Br J Gen Pract*. 2006;56:511-517.

Synopsis Eight primary care practices in England recruited 681 adult patients with type 2 diabetes to be randomized to receive usual care or to have a finger-stick rapid A1C assay during an office visit. After 1 year, the researchers assessed how many patients achieved good glycemic control (defined as an A1C level of less than 7%) and the costs of care. These were analyzed by intention to treat. The final analysis was based on data from more than 90% of the patients (who completed the study and had data). At the end of the year, there was no difference in glycemic control compared with the baseline A1C values. There was also no difference in the costs of diabetes-related care between the two groups.

Levels of evidence are explained at <http://www.infopeoms.com/levels.html>.

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