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INSIDE

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Payers for Performance, Beware!

ABSTRACT & COMMENTARY

By Barbara A. Phillips, MD, MSPH

Professor of Medicine, University of Kentucky; Director, Sleep Disorders Center, Samaritan Hospital, Lexington.

Dr. Phillips reports no financial relationship to this field of study.

Synopsis: *With the exception of prescription of ACE inhibitors or blockers, performance measures for heart failure do not predict mortality or rehospitalization in the first 60 to 90 days after discharge.*

Source: Fonarow GC, et al and the OPTIMIZE-HF Investigators and Hospitals. *JAMA.* 2007;297:61-70.

This was a prospective application of the American College of Cardiology/American Heart Association (ACC/AHA) performance measures to 5791 patients in 91 US hospitals. Patients included in the study were recruited from the Organized Program to Initiate Lifesaving Treatment in Hospitalized Patients With Heart Failure (OPTIMIZE-HF) registry. The following indicators in the ACC/AHA performance measures[1] and the fraction of patients in this cohort whose care included meeting this standard were:

1. discharge instructions about diet, activity, medications, weight, and follow up (66% of the study cohort had this documented in their records);
2. evaluation of left ventricular systolic function (89% received this);
3. angiotensin-converting enzyme (ACE) inhibitor or angiotensin receptor blocker (ARB) for left ventricular systolic dysfunction (83% of eligible patients received this);
4. adult smoking cessation advice (62%);
5. anticoagulation for those with atrial fibrillation (53%)

In addition, 84% of the cohort received prescriptions for beta blockers at discharge, even though this is not a performance measure in the ACC/AHA recommendations for patients hospitalized with heart failure.

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The OPTIMIZE-HF registry gathers data on patient characteristics, in-hospital and discharge management via a web-based report form. For the current study, follow-up data about survival, readmission and medical management were prospectively collected for a prespecified, representative cohort of the OPTIMIZE-HF registry. This data collection occurred 60-90 days after hospitalization for congestive heart failure. The mean age of the cohort was 72 years, 51% were men, and 78% were white. Ischemia was the cause of the CHF in 42%; 43% of the patients had diabetes, and 53.2% had left ventricular systolic dysfunction with a mean left ventricular ejection fraction (LVEF) of 37%. During the 60-90 day follow-up, the cohort had a death rate of 8.6% and a re-admission rate of 29.6%. As noted, the percentages of eligible patients whose care included each of the 5 performances measures are given above in association with each measure.

After statistical analysis of outcomes adjusted for risk factors, none of the performance measures was associated with reduced 60-90 day mortality, but use of beta blockers (not currently a performance standard) was. With regard to the combined outcome of reduced mortality or readmission, only the prescription of ACE inhibitors or ARBs for those with left ventricular systolic dysfunction, or beta blockers (again, not part of the performance standards) was associated with reduced re-admission/mortality.

COMMENTARY

Pay for performance (P4P) is gaining acceptance among physicians and medical institutions, but the findings of this paper serve to remind us that, as is true of many things, the devil is in the details. The authors note in their discussion: "As this limited set performance measures is being used to publicly report the quality of heart failure care delivery at the hospital level and is beginning to affect financial payments to medical centers and individual physicians, it is essential that measures be prioritized to include those that are proven to be closely associated with patient outcomes."

It is distressing to note that only 1 of 5 P4P outcomes predicted mortality and/or hospitalization in the short run in this study, and that the strongest predictor was not included in the P4P measures. As the authors point out in their discussion, "smoking cessation counseling" can be meaningful or trivialized, depending on the commitment and the time constraints of the clinician, as can "discharge instructions.

In doing background reading on this paper, I came across an AMA statement published in 2005[2] that DOES include beta blockers in the performance measure for those with HF. I was confused about this discrepancy and contacted the first author of this paper, Dr Gregg Fonarow, who promptly and graciously replied:

"The ACC/AHA did release outpatient performance measures for patients with heart failure in late 2005/early 2006 … However the hospital performance measures released by the ACC/AHA at the same time excluded beta blockers… .

"As internal medicine physicians care for patients in both the inpatient and outpatient setting, it is important for them to recognize that there are other therapies beyond those covered by the JCAHO/CMS and ACC/AHA performance measures in the hospital setting that are strongly linked to clinical outcomes, such as beta blockers. Improving the use of beta blockers at hospital discharge in eligible heart failure patients who are stable and without contraindications would be expected to substantially reduce the risk of rehospitalization and mortality in the first 60-90 days post discharge as well as long term."

Point well taken. Simply complying with performance measures may get you paid, but it may not serve your patients well! As P4P continues to evolve, it will be important for clinicians to "evaluate the evaluators," (as the cardiologists are doing[3]) and to continue to think critically about

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Questions & Comments

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application of performance measures as we care for patients, one by one. ■

References

1. Bonow RO, et al. ACC/AHA clinical performance measures for adults with chronic heart failure: a report of the American College of Cardiology/American Heart Association Task Force on Performance Measures (Writing Committee to Develop Heart Failure Clinical Performance Measures) endorsed by the Heart Failure Society of America. *J Am Coll Cardiol.* 2005;46:1144-1178.
2. http://www.ama-assn.org/ama/pub/category/15777.html (Heart failure measurement set from AMA website, last accessed 1/7/2007)
3. Bufalino V, et al and the American Heart Association's Reimbursement, Coverage, and Access Policy Development Workgroup. Payment for quality: guiding principles and recommendations: principles and recommendations from the American Heart Association's Reimbursement, Coverage, and Access Policy Development Workgroup. Circulation. 2006;113:1151-1154.

A Placebo-Controlled Trial of Pioglitazone in Subjects with NonAlcoholic Steatohepatitis

ABSTRACT & COMMENTARY

By Malcolm Robinson, MD, FACP, FACG

Emeritus Clinical Professor of Medicine, University of Oklahoma College of Medicine, Oklahoma City.

Dr. Robinson reports no financial relationship to this field of study.

Synopsis: *Until now, there has been no proven therapy for nonalcoholic steatohepatitis. Pioglitazone, known to improve insulin resistance, was shown to result in metabolic and histologic improvement in this common and potentially highly morbid malady.*

Source: Renate Belfort, et al. *The New England Journal of Medicine.* 2006;355:2297-2307

Although often unrecognized, nonalcoholic steatohepatitis (NASH) is an increasingly common chronic liver disease that can progress to cirrhosis and hepatoma. Typical features associated with NASH include obesity, fatty liver disease, and type 2 diabetes mellitus. Proposed treatments have included orlistat, vitamin E, ursodeoxycholic acid, and lipid lowering agents. Although uncontrolled trials of medications that reduce glucose have been promising, none of the therapeutic regimens have been subjected to controlled randomized trials. Pioglitazone reduces glucose levels and ameliorates insulin resistance in fat, liver and in muscles. It also improves lipid metabolism in type 2 diabetes. In NASH, there are low plasma adiponectin levels and poor adiponectin receptor expression in the liver. Pioglitazone and other drugs of its class (thiazolidinediones) increase adiponectin levels, have anti-inflammatory effects, stimulate fatty acid oxidation, and inhibit hepatic fatty acid synthesis. All of these effects suggest potential efficacy in NASH. This study included 55 patients with NASH confirmed by complete evaluation including liver biopsies who also had impaired glucose tolerance or type 2 diabetes mellitus. Significant alcohol consumption was an exclusion as was fasting blood sugar levels above 240 mg per deciliter. Compliance was assessed during a 4 week placebo run-in period. Hepatic fat was measured with magnetic resonance spectroscopy, and whole body fat was assessed using dual-energy X-ray absorptiometry. Baseline glucose clearance was measured isotopically, and hepatic insulin sensitivity was computed. During a 6 month subsequent study, weight-reducing diet plus placebo was compared to the same diet plus pioglitazone 45 mg daily. Results indicated that the pioglitazone recipients had significant improvements vs placebo in hepatic histology along with improved glycemic control and normalized hepatic aminotransferase levels. Pioglitazone decreased hepatic fat by 54% vs 0% for placebo plus diet. Systemic inflammation was also lessened by pioglitazone as mirrored by plasma TNF-α and TGF-beta levels. However, fibrosis scores were not altered by pioglitazone.

■ COMMENTARY

NASH is an increasingly common form of liver disease, and it is likely to increase further with the "fattening" of western populations. Although not recognized in the past as a major progenitor of hepatic cirrhosis, NASH is now thought to account for a large percentage of idiopathic liver fibrosis. This study strongly suggests that drugs such as pioglitazone may interfere with the pathophysiology of nonalcoholic steatohepatitis. However, as the authors themselves point out, actual clinical studies are needed to document the long term benefits of such treatment in terms of morbidity and mortality. Such studies will undoubtedly be initiated in the near future. Meanwhile, even in the absence of definitive clinical corroboration of these metabolic and histologic data, many physi-

cians may opt to initiate such therapy in patients with documented NASH. ■

Quick Fix vs Delayed Gratification

ABSTRACT & COMMENTARY

By Allan J. Wilke, MD

Residency Program Director, Associate Professor of Family Medicine, University of Alabama at Birmingham School of Medicine—Huntsville Regional Medical Campus, Huntsville.

Dr. Wilke reports no financial relationship to this field of study.

Synopsis: *When compared to physiotherapy and watchful waiting, corticosteroid injection in the treatment of lateral epicondylitis helps in the short term, but had the worst results at one year.*

Source: Mobilisation with movement and exercise, corticosteroid injection, or wait and see for tennis elbow: randomised trial. *BMJ*. 2006;333:939-944.

This is a single-blind, randomized controlled trial (RCT), conducted in Australia in 2002 through 2004, that compared corticosteroid injection (CI), physiotherapy (PT), and a wait-and-see (WS) approach of the treatment of lateral epicondylitis (tennis elbow). The authors were following up on their previous studies that indicated a benefit to manipulation of the elbow and exercise. Four hundred ninety-seven (497) subjects where recruited through advertisement. Two hundred ninety-nine (299) were not randomized because they did not meet the inclusion criteria (pain over the lateral elbow of at least six weeks' duration), met exclusion criteria (neck or shoulder problems, bilateral tennis elbow, or treatment in the last six months), or declined to participate. The remaining 198 were randomized to three groups, WS (67), CI (65), and PT (66). Average age was 47.6 years, and 35% of subjects were female. The subjects in the WS group were given reassurance and encouragement and were instructed on changing their daily activity. They were allowed to use analgesics and physical measures. Subjects in the CI group were injected with a mixture of 1% lidocaine (1 mL) and triamcinolone acetonide (10 mg in 1 mL). They were instructed to gradually return to their normal activities and were allowed to receive a second injection after two weeks if necessary. Members of the PT group met with a therapist for eight sessions of 30 minutes duration over 6 weeks for elbow manipulation and exercise. They were also instructed in exercises and manipulations to perform at home. The three groups were evaluated on pain-free grip, self-reported global improvement, and complaints referable to the elbow by a blinded assessor at 3, 6, 12, 26, and 52 weeks.

At six weeks follow-up, subjects in the CI group had greater pain-free grip and greater global improvement and were judged to have less severe elbow complaints when compared to the WS group. The same results held when the CI group was compared to the PT group, except for global improvement, where there was no significant difference. When the PT and WS groups were compared, the PT group scored significantly better across all measures. At follow up at 52 weeks the CI group fared worse than the PT group for all three measures and worse than the WS group in two out of three. There was no difference between the WS and PT groups. An area-under-the-curve analysis that incorporated the findings at all follow-up visits favored the PT group over the CI group for all 3 measures and over the WS group for all but global improvement. The AUC analysis showed that the WS group did better than the CI group for global improvement and assessor judgment. The CI group reported the most recurrences of lateral epicondylitis. Most side effects were mild. However, in the CI group two subjects had loss of skin pigment and one had atrophy of subcutaneous tissue.

■ COMMENTARY

I read this study with mixed feelings. My personal and professional experiences with steroid injection have been positive, and there is something magical in providing patients with near-instantaneous pain relief. However, I would be hard-pressed to put together 198 patients for one year to study this objectively. Long follow-up of a large number of subjects is this study's strength.

An editorial published in the same journal notes that the "cost of physiotherapy is much higher than the cost of corticosteroid injections or a wait and see policy." The authors recommend that physicians discuss the various options with their patients. Interestingly, these editorialists co-authored a cost-effectiveness study of treatment for lateral epicondylitis, which showed that a wait-and-see policy was best. These editorialists also published a systematic review of corticosteroid injection for lateral epicondylitis that came to essentially the same conclusions as this article. Before you abandon this

procedure entirely, however, a RCT added a fourth group, steroid injection plus physiotherapy. Patients in this study who received a steroid injection did better, whether they received physiotherapy or not. The authors recommend injection for patients "demanding a quick return to daily activities." Other therapies for lateral epicondylitis have been tested, including pulsed low-intensity ultrasound, which was no more effective than placebo, and botulinum toxin, which helped some patients for three months, but was associated with finger paralysis and weakness. Again, it appears that patience is a virtue. ■

Colonoscopic Withdrawal Times and Adenoma Detection during Screening Colonoscopy

By Malcolm Robinson, MD, FACP, FACG

Emeritus Clinical Professor of Medicine, University of Oklahoma College of Medicine, Oklahoma City.

Dr. Robinson reports no financial relationship to this field of study.

Synopsis: *In the setting of screening colonoscopy, longer durations of observation during withdrawal of the colonoscope were associated with higher detection rates for neoplasia.*

Source: Robert L Barclay, et al. *The New England Journal of Medicine.* 2007;355:2533-2541.

Colonoscopy is widely employed as the preferred screening modality for detection of colon neoplasia. This is based on the belief that excision of early neoplastic lesions will dramatically reduce subsequent development of adenocarcinoma of the colon. The potential reduction in colorectal cancer may be as high as 90% as a result of colonoscopy and polypectomy. In the study being reviewed, 12 highly experienced gastroenterologists performed 7882 colonoscopy examinations over 15 months. Of these, 2053 were screening exams in patients who had not previously undergone colonoscopy. Sizes, histology, and numbers of neoplastic lesions were recorded from these latter individuals. Also recorded were durations of colonoscope insertion to the cecum and withdrawal to the anus as recorded for each exam done by each of the participating gastroenterologists. Neoplastic lesions were found in 25.3% of screened subjects. Large differences were noted in the detection rates among these individual gastroenterologists, ranging from 0.10 to 1.05 mean lesions per subject screened. Likewise, percentages of subjects found to have adenomas differed between examiners, from a low of 9.4% to a high detection level of 32.7%. Mean colonoscope withdrawal times from the cecum to the anus also varied among these gastroenterologists, from 3.1 to 16.8 minutes. Statistical analysis of the results indicated that colonoscopists spending more than 6 minutes for scope withdrawal had significantly higher detection rates for any neoplasia vs those with withdrawal times less than 6 minutes (28.3% vs 11.8%, $p < 0.001$). Results for advanced neoplasia (ie, villous features, dysplasia, or cancer) diverged in a similar pattern (6.4% vs 2.6%, $p < 0.005$). Incidentally, the range for detection of hyperplastic (non-neoplastic) polyps also varied between gastroenterologists (5.5-28.6%). The authors of this study cautiously suggest that the high correlation between slower withdrawal of the colon endoscope and higher detection rates for neoplasia might mean that standards for maximally effective colonoscopy could reasonably include a minimum time for colonoscope withdrawal.

■ COMMENTARY

In an accompanying editorial (NEJM 355:2588-2589), David Lieberman reiterates evidence that supports reduced colon cancer rates over a period of 10 years in patients with previous normal colonoscopies. However, he stresses the point that colonoscopy can only be a truly successful screening tool if there is a low rate of complications along with few missed lesions. Dr. Lieberman also comments that the results of the Barclay study should be intuitive in that careful and unhurried examination of the colon ought to achieve maximal patient benefits. There are cancers (0.3 to 0.9%) that occur in patients who have ostensibly had previous normal colonoscopy examinations. Possible explanations include somewhat less likely carcinogenesis without previous benign neoplasia or extremely rapidly growing lesions. However, missed lesions at colonoscopy are by far the most likely cause for cancer seen in individuals with reportedly normal recently performed colonoscopies. Perhaps more than ever before, we live in an age that seems unusually strongly influenced by monetary issues. Many gastroenterologists feel that they are under pressure to perform as many procedures as possible to maximize reimbursement

despite perceived decreases in procedure-related fees. Some endoscopists feel that available slots for performing procedures are limited, and this also leads to hurry. Indeed, in the Barclay study under discussion, so-called "standard" 30-minute slots were used for these procedures. It seems to this reviewer that there should be strong incentives not to rush procedures. It is far more than intuitive that slow and careful observation during all phases of colonoscopy will achieve the best results for the patients being examined. For some patients, times much greater than 6 minutes will be required, and a 30-minute slot may be painfully inadequate. It seems unlikely that a truly excellent colon endoscopy can ever be done with rushed insertion or withdrawal of the colonoscope. The authors of this study have recommended additional prospective studies to confirm their work. I would argue that gastroenterologists should heed the existing results…and slow down. ■

Pharmacology Update

Estradiol Gel 0.06% (Elestrin™)

By William T. Elliott, MD, FACP, and James Chan, PhD, PharmD

Dr. Elliott is Chair, Formulary Committee, Northern California Kaiser Permanente; Assistant Clinical Professor of Medicine, University of California, San Francisco; Dr. Chan is Pharmacy Quality and Outcomes Manager, Kaiser Permanente, Oakland, CA.

Drs. Chan and Elliott report no financial relationship to this field of study.

THE FDA HAS APPROVED AN ESTRADIOL GEL FOR the management of hot flashes associated with menopause. The formulation provides the lowest dose of estradiol approved to date. It will be marketed by Kenwood Pharmaceuticals as Elestrin.

Indications

Estradiol gel is approved for the treatment of moderate to severe vasomotor symptoms associated with menopause.[1]

Dosage

The recommended dose is 0.87 g (one pump actuation) applied once daily to the upper arm to the shoulder (320 cm2). One actuation delivers 12.5 mcg/day and two (1.7 g), 37.5 mcg/day. A progestin should be coadministered in patients with a uterus to reduce the risk of endometrial cancer.

Elestrin will be available as a 144 g metered-dose pump delivering 100 doses of 0.87 g per actuation.

Potential Advantages

Estradiol gel provides a transdermal delivery of estradiol with the lowest dose of estradiol. A 0.87 g delivers 12.5 mcg of estradiol and provides a means plasma level of 15.4 pg/ml.[1]

Potential Disadvantages

Elestrin is not approved for treating vaginal symptoms or osteoporosis. The gel is less elegant than the transdermal patch as it needs to be applied to the upper arm and 5 minutes must be allowed for the gel to dry before dressing. The gel contains alcohol and is flammable. Direct skin contacts with others should be avoided for 2 hours. Concomitant application of a sunscreen at the same site as Elestrin increases exposure to estradiol.[1] A sunscreen can be applied 25 minutes after application of the gel. CYP3A4 inducers and inhibitors can reduce and increase plasma levels of estradiol respectively.[1]

Comments

Estradiol gel delivers 12.5 mcg/day and provides a mean plasma concentration of estradiol of 15.4 pg/ml after 14 days of administration. The lowest patch deliver 25 mcg/day and provides 24.5 pg/ml (eg, Alora).[2] In a placebo controlled trial (n = 415) estradiol gel significantly reduced the number of hot-flushes per day as well as severity score/day. The numbers of hot flushes were reduced, at week 12, by 76%, 64%, and 40% for estradiol gel 1.7 g/day, 0.87 g/day, and placebo respectively from a baseline frequency of about 13 per day by week 12. Severity was reduced by 50%, 33%, and 12.5% from a baseline value of 2.4 (1 = mild, 2 = moderate, 3 = severe). Statistical difference was observed at week 5 for the lower strength and week 4 for the higher strength. The product is expected to be available in the summer of 2007.

Clinical Implications

Findings from the Women's Health Study suggest that estrogens may increase the risk of stroke and DVT and estrogen/progestin may increase the risks of breast cancer, cardiovascular events, DVT, and

dementia. Therefore these should be used at the lowest effective dose and for the shortest period of time. Patients should be reevaluated every 3 to 6 months. The gel is not approved for the treatment of vulvar or vaginal atrophy associated with menopause. These are best treated with topical vaginal products rather than topical estrogen. The cream and vaginal ring appears to be equally effective.3 Elestrin provides a low dose of estradiol for vasomotor symptoms associated with menopause.

References

1. Elestrin Product Information. Kenwood Therapeutics. December 2006.
2. Alora Product Information. May 2005. Watson Pharma, Inc.
3. Suckling J et al. Cochrane Database Syst Rev. 2006;Oct18;(4):CD001500.

CME Questions

7. CME Question: NASH (nonalcoholic steatohepatitis) is associated with all but which of the following:

a. impaired glucose tolerance.
b. morbid obesity
c. recurrent and prolonged hypoglycemic episodes
d. fatty liver disease, often including significant fibrosis
e. insulin resistance

8. The AHA/ACC heart failure performance measures include 5 indicators:

a. each of which robustly predicts early mortality and morbidity in patients with congestive heart failure.
b. each of which is based on one or more randomized controlled trials in patients with heart failure
c. only one of which strongly predicted early morbidity and mortality in the OPTIMIZE-HF study
d. including the following: use of beta blockers; use of ACE inhibitors for heart failure patients with left ventricular systolic failure, smoking cessation advice, and intensive counseling about weight loss

9. Choose the incorrect response. When treating lateral epicondylitis,

a. a wait-and-see approach is the most cost effective.
b. corticosteroid injection produces immediate and enduring improvement.
c. physiotherapy has the best long-term results.
d. patient preference should be considered.
e. corticosteroid injections are associated with more adverse side effects.

10. Gastroenterologists whose colonoscopy exams of their patients involved mean withdrawal time of greater than 6 minutes detected what percentage of colon neoplastic lesions?

a. approximately 0.1%
b. approximately 1.0%
c. approximately 10.0%
d. approximately 30%
e. approximately 50%

Answers: 7 (c); 8 (c); 9 (c); 10 (d)

CME Objectives

The objectives of *Internal Medicine Alert* are:

- to describe new findings in differential diagnosis and treatment of various diseases;
- to describe controversies, advantages, and disadvantages of those advances;
- to describe cost-effective treatment regimens;
- to describe the pros and cons of new screening procedures.

Clinical Briefs

By Louis Kuritzky, MD, Clinical Assistant Professor, University of Florida, Gainesville

Dr. Kuritzky is a consultant for GlaxoSmithKline and is on the speaker's bureau of GlaxoSmithKline, 3M, Wyeth-Ayerst, Pfizer, Novartis, Bristol-Myers Squibb, AstraZeneca, Jones Pharma, and Boehringer Ingelheim.

BNP: Not Just for Heart Failure

ELEVATED LEVELS OF BRAIN natriuretic peptide (BNP) reflect cardiac ventricular wall stress, and correlate well with the presence and severity of heart failure. Similarly, BNP levels at hospital discharge for heart failure predict prognosis. Indeed, BNP levels can discriminate between heart failure and pulmonary etiologies amongst dyspneic patients presenting to an acute care setting.

The Heart and Soul Study is comprised of approximately 1000 patients with stable coronary heart disease (CHD) residing in Southern California, followed to evaluate the relationship between psychological factors and outcomes in persons with existing CHD.

Bibbins-Domingo report on data evaluating the relationship between BNP and CHD in patients with stable heart disease, without evidence of exercise intolerance (patients must be able to walk one block).

Over a 3.7 year period of observation, a linear relationship between BNP and cardiovascular events/death was noted. This relationship was not altered by the presence of an abnormal ejection fraction. Individuals in the uppermost quartile of BNP experienced 8 times the rate of cardiovascular events compared to those in the lowest BNP quartile.

BNP is a potent prognostic marker, not only in acute and recently treated heart failure, but also in ambulatory patients with stable coronary artery disease. ■

Bibbins-Domingo, et al. JAMA. *2007;297:169-176.*

Like Everything Else, The Brain is Use It or Lose It

Cognitive Decline (CGD) has effects that spill over into impaired activities of daily living (ADL). Cognitive training has been used to remedy CGD, and has been shown to produce significant improvements in cognitive function; whether these cognitive improvements translate into favorable effects upon ADL has not been studied.

Adult senior citizens (n = 2,832) were invited to join a 5-year study investigating the impact of 3 areas of training (memory, reason, and processing speed) on both ADL and cognitive abilities. Subjects were randomized to receive either 10 sessions of training at baseline, followed by booster sessions at 1 year and 3 years, or no intervention.

The training in reasoning resulted in less decline in ADL than no cognitive training. Training for processing and memory did show prompt positive effects on each of those specific cognitive components, and these effects were quite durable, since they remained measureably different 5 years later. However, only reasoning training impacted ADL. Cognitive training favorably affects cognitive decline. Of the cognitive training interventions, this study suggests that cognitive reasoning training also reduces decline in ADL. ■

Willis SL, et al JAMA. *2006;296:2805-2814.*

High Vitamin D Levels are Associated with Reduced Risk of MS

ALTHOUGH THE CAUSE OF MS remains uncertain, prevailing opinion suggests that it is an autoimmune disorder. Epidemiologic data shows that geography is associated with MS: increasing distance from the equator—north or south—is associated with greater incidence of MS. One explanation for the observation that increasing latitude is associated with increased MS is that Vitamin D status at increasing latitude is progressively less optimal. For example, in Boston during the winter, little UV-B light penetrates the atmosphere, producing inadequate vitamin D generation.

To study the relationship between Vitamin D status and MS, serum samples from active duty US military (n = 7 million) were assayed for 25-hydroxyvitamin D (25HD). Persons with MS had their 25HD levels compared with persons without MS.

Using the lowest 25HD quintile for comparison, higher quintiles of 25HD were associated with 40-60% lower incidence of MS, but only in the Caucasian population. No relationship between 25HD and MS was seen in black or Hispanic subjects. There may be a relationship between MS and 25HD. ■

Munger KL, et al. JAMA. *2006;296:2832-2838.*

In Future Issues: **Prevalence and Risk Factors for ED**