Geriatric ED Patients Get Inappropriate Drugs

BY BRUCE JANCIN

NEW ORLEANS — One in six elderly patients who visit an emergency department receives a potentially inappropriate medication, according to a national study.

That adds up to an estimated 2.7 million geriatric patients each year who get one or more medications with unfavorable risk-benefit ratios because of age-related changes in pharmacodynamics, according to Dr. William J. Meurer, who spoke at the annual meeting of the Society for Academic Emergency Medicine.

If the geriatric individual was prescribed two or more medications during their time in the emergency department, the odds that at least one of them would be potentially inappropriate jumped sevenfold, compared with the odds among recipients of a single medication, according to Dr. Meurer of the University of Michigan, Ann Arbor.

In a multivariate logistic regression analysis, another strong predictor of receiving a potentially inappropriate medication was geographic location: Elderly patients who visited an emergency department in any part of the country other than the Northeast were at twofold greater risk.

The other significant predictors were being a woman, which was associated with a 1.49-fold increased risk; being age 65-74 years, with a 1.48-fold greater risk than in patients aged 75 years and up; and being seen only by an attending emergency physician without resident involvement, which conferred a 1.19-fold increased risk.

He presented an analysis of National Hospital Ambulatory Medical Care Survey data for the years 2000-2006. The data set provided a weighted estimate encompassing 116 million ED visits by elderly individuals who were ultimately discharged home.

About 80% of the emergency department visits entailed no resident involvement.

At least one drug on the updated Beers Criteria of potentially inappropriate medications in the elderly was prescribed in 16.8% of visits (Arch. Intern. Med. 2003;163: 2716-24). The absolute risk was 1% lower in 2005-2006 than in 2000-2004, a significant difference because of the large numbers involved.

Top 10 Potentially Inappropriate Drugs Prescribed for Elderly Patients in the ED

Medication	Percentage of all potentially inappropriate prescriptions
Promethazine (Phenergan)	24.1%
Ketorolac (Toradol)	15.8%
Propoxyphene (Darvon)	11.8%
Meperidine (Demerol)	11.3%
Diphenhydramine (Benadryl)	6.0%
Clonidine (Catapres)	5.4%
Hydroxyzine (Atarax)	3.8%
Diazepam (Valium)	3.8%
Cyclobenzaprine (Flexeril)	2.5%
Nifedipine (Procardia)	2.0%

Source: Dr. Meurer

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Dr. Meurer reported no financial conflicts of interest. ■

Diet May Alter Risk of Age-Related Macular Degeneration

BY RENÉE MATTHEWS

Supplements of antioxidants and zinc plus higher dietary intakes of docosahexaenoic acid or eicosapentaenoic acid and a reduction in the dietary glycemic index protect against progression to advanced age-related macular degeneration, according to an analysis of 8 years of data from the Age-Related Eye Disease Study.

The same analysis also found that a diet rich in docosahexaenoic acid (DHA) was associated with a lower progression of early age-related macular degeneration (AMD), independent of the supplements.

Such benefits would come from the weekly consumption of two to three servings of fatty fish, such as salmon, tuna, mackerel, shellfish, and herring. That would achieve the recommended daily intake of omega-3 fatty acids, and substantially cut the risk of both early- and late-stage AMD, wrote Chung-Jung Chiu, D.D.S., Ph.D., of Tufts University, Boston, and his colleagues (Br. J. Ophthalmol. Online First 2009 [doi:10.1136/bjo.2008.143412]).

There is no cure for AMD, making efforts to prevent it or delay its progression all the more pressing, especially with a rapidly aging world population.

Data from observational studies have suggested that a higher intake of antioxidants is associated with a reduced risk of AMD. Earlier data from the Age-Related Eye Disease Study (AREDS) have shown that high doses of antioxidants (vitamins C and E, and beta-carotene) and zinc benefit people at risk for advanced AMD. However, other data have suggested that DHA and eicosapentaenoic acid (EPA) may be protective against the disease, or that lowering the dietary glycemic index (dGI) reduces disease risk.

The new study is the first to examine a potential association between progression to advanced AMD and intake of the aforementioned nutrients plus dietary DHA and EPA and a reduced dGI.

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Weekly consumption of 2-3 servings of DHA-rich foods such as salmon, tuna, or mackerel cut progression of AMD.

Of 3,640 study participants, 2,924 individuals (2,523 eyes) in the early stages of the disease were selected after exclusions, and continued receiving placebo, antioxidants, zinc, or antioxidant plus zinc.

Their mean age was 69 years, 97% were white, and 58% were women. Fifty-six percent of the participants had ever smoked and 39% were hypertensive, and their mean dietary intakes, expressed as servings/week, were fruits and juices (16), vegetables (16), fish (2), meat (5), and dairy products (11). The researchers gathered data on possible risk factors from baseline physical and ophthalmic examinations and demographic and food-frequency questionnaires, and obtained and graded fundus photographs of the macula at baseline, 2 years, and then annually up to 8 years.

The eyes were originally classified into one of five groups based on increasing severity of drusen or AMD type, with groups 1-3 defined as early AMD and groups 4 and 5 as advanced AMD. Groups 1 and 2 (at risk of early AMD progression) and group 3 (at risk of advanced AMD progression) were used in the current study.

Progression for an eye was defined as a more advanced grade than the baseline grade. The AREDS supplementation formula contained 5, 6, and 18 times the recommended daily allowance of zinc, vitamin C, and vitamin E, respectively.

Independent of AREDS supplementation, increased intake of DHA and EPA and a lower dGI were associated with a lower risk of progression from early to advanced AMD. Participants who consumed the greatest amounts of DHA (64 mg/day or more) and EPA (42 mg/day or more) and had the greatest reduction in dGI were at the lowest risk.

The protective effect of the omega-3 fatty acids (DHA and EPA) against progression to advanced disease may have occurred because Western diets provide low levels of the fatty acids, the researchers said. Thus, any increase in their intakes would promote prevention.

In regard to dGI, the participants' diet was high in refined carbohydrates (high-GI foods). "These data show that a 6-unit reduction in dGI [roughly] equivalent to replacing five slices of white bread (GI = 100) with five slices of whole-grain bread (GI = 79) from the daily diet … might eliminate almost 8% of advanced AMD cases in a 5-year period," they reported.

However, in participants at risk for early AMD progression, only those in the placebo group benefited from higher DHA intake, because of an antagonistic interaction between DHA and AREDS supplementation in the other groups.

That antagonistic interaction "was not observed in our analysis of progression to advanced AMD," wrote the authors. "These results may imply that the protective effect of DHA may be through different mechanisms at different stages of AMD progression."

Analysis of the global effect of low dGI showed a significant protection against progression to advanced AMD, independent of AREDS intervention, although an interaction test suggested that the extent of protection may vary by type of AREDS intervention. Further stratification analysis found a synergistic interaction between low dGI diets and AREDS supplementation, suggesting that a low-dGI diet is beneficial for those at risk of advanced disease, and that those taking the supplementation would benefit even more.

However, a higher dietary beta-carotene intake was associated with an increased risk of progression to advanced disease. Although that risk was independent of the type of supplementation, it was strongest in those receiving the antioxidants plus zinc.

The investigators noted that the AREDS supplementation was already not recommended for smokers because of the risk of lung cancer from beta-carotene.

The new finding linking beta-carotene and disease progression lends support to dropping beta-carotene from the supplement, they noted.

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