NATIONAL PBM BULLETIN

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VAMedSAFE Bulletin: High-Dose Vitamin E (>400 IU/Day)

There have been a number of large, long-term clinical trials evaluating the role of vitamin E in the prevention of certain chronic diseases. The premise for these trials was based upon the knowledge that vitamin E possesses antioxidant properties and its use may result in a reduced risk for certain chronic diseases including, among others, cardiovascular disease, cancer and Alzheimer's disease.

In the case of cardiovascular disease, investigators have failed to show a benefit of vitamin E in reducing morbidity or mortality associated with cardiovascular events. Over the past two years, there have been three published meta-analyses investigating the use of vitamin E either alone or combined with other vitamins in the prevention of cardiovascular disease.[1-3] In all three analyses, the effect of vitamin E supplementation had no statistically significant effect on cardiovascular outcomes including all-cause mortality, cardiovascular mortality, fatal or nonfatal myocardial infarction (MI) or blood lipids.

In a more recently published meta-analysis, investigators observed an increase in all-cause mortality in those users of high-dose vitamin E (≥400 IU/day) versus control or placebo.[4] The analysis was performed with the intent of determining whether there was a dose-response relationship between vitamin E supplementation and all-cause mortality since previously published meta-analyses had not explored varied doses of vitamin E. Based upon their findings, the authors concluded that high-dose vitamin E should be avoided.

In the case of using vitamin E to slow cognitive deterioration in patients with Alzheimer's disease, authors of a Cochrane Database Systematic Review determined that there was insufficient evidence to support the efficacy of vitamin E in Alzheimer's disease. In their review, they identified only one trial that was considered to be of acceptable methodology.[5] In that trial, patients with moderate disease were randomly assigned to placebo, vitamin E 2000 IU/day, selegiline 10 mg/day, or both for two years. The authors of the systematic review found the results to be difficult to interpret but felt that there was sufficient evidence of possible benefit to justify further studies. There was also a statistically significant excess of falls in the vitamin E group compared with placebo, which also needs further investigation.[6]

In the case of preventing the onset of or reducing the severity of neuroleptic-induced tardive dyskinesia (TD), authors of a Cochrane Database Systematic Review determined from the available evidence that vitamin E did not improve symptoms of TD but may protect against deterioration. There was no evidence for vitamin E in those with early symptoms of TD.[7] In a recently published study of vitamin E 1200 IU/day versus placebo in 41 inpatients with TD, investigators observed a greater reduction from baseline in the Abnormal Involuntary Movement Scale (AIMS) in favor of vitamin E.[8]

For the 4th quarter of this year, VA had dispensed high-dose vitamin E (400 IU units or greater) to 50,814 unique patients.

VA MedSafe Recommendations:

1. Since there is an abundance of data suggesting that supplementation with vitamin E has no apparent benefit in preventing or reducing cardiovascular events but there are some data suggesting an increased risk in all-cause mortality, VA PBM-MAP recommends that high-dose vitamin E not be used for the purpose of cardiovascular disease prevention.
2. In those patients using high-dose vitamin E for other chronic disease indications, it is recommended that VA clinicians consider the evidence for benefit and risk of such therapy in individual patients.

References:

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