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## **Herbal product use among anticoagulation clinic patients**

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Warfarin interacts with many conventional drug products and herbal products,<sup>1-3</sup> Given the incompleteness of information on drug-herbal product interactions and the potential for health care practitioners to be unaware of their patients' utilization of herbal products, we surveyed the use of such products among patients receiving warfarin through an anticoagulation clinic. Patients at the University of Maryland Medical System Anticoagulation Clinic were asked to complete an anonymous written questionnaire during their regularly scheduled appointments over one month. The clinic is an outpatient unit of a large urban teaching medical center in Baltimore, The survey consisted of questions about demographics, socioeconomic status, health status, 39 herbal supplements that may interact with warfarin, why the patient uses herbal supplements, and whether their use had been discussed with the patient at the clinic. Our outcome variable was current herbal product use, assessed as use of an oral dosage form, including tea, in the prior three months. Predictor variables included age, sex, ethnicity, education, income, and indicators of health status. The questionnaire was pretested for readability and ease of administration. The University of Maryland's institutional review board (IRB) reviewed and approved the study protocol, which was deemed to be exempt from the IRB approval process, Chisquare tests were used to compare herbal users with nonusers.

A total of 111 patients had clinic appointments during the study period, and 65 of them (59%) completed the survey. The respondents were predominantly African-American (86%) and female (62%). More than 50% had not completed high school, 17% were currently employed, and 74% had a household income of less than \$20,000 per year. Twenty-seven patients (43%) described their health status as excellent or good.

Eleven patients (17%) reported using herbal products. The most common herbals used were green tea (five patients), garlic (four patients) and ginkgo biloba (three patients). Herbal

users tended to be younger than nonusers (82% of users, compared with 49% of nonusers, were younger than 60 years) ( $p < 0.05$ ). In addition, users tended to be more educated than nonusers (70% of users, compared with 41% of nonusers, had graduated from high school) ( $p < 0.09$ ). Herbal product use was not significantly associated with sex, race, income, prescription insurance status, selfperceived health status, and whether a clinician in the clinic had ever discussed herbal product use with the participants.

Five of the 11 herbal users reported that the major influence on their decision to use these supplements was the mass media—television, magazines, and newspapers. No patients reported that a physician had suggested the use of herbal products, and only one reported that another health care professional had suggested such use. Patients most frequently purchased their herbal products from a pharmacy, as opposed to a grocery store or natural food store.

Over two thirds of patients (70%) reported that no practitioner at the clinic had discussed the use of herbal products with them. While this factor was not associated with herbal use among the participants, it does suggest that health care workers are not discussing herbal use with their patients as part of the routine interview process.

Very little is known about herbal product use among medically vulnerable subpopulations, such as low-income, chronically ill urban African-Americans in our sample. Interestingly, we found the prevalence of herbal product use in the sample (17%) to be comparable with that reported for the general population.<sup>4,5</sup>

Our findings should be interpreted with several limitations in mind. There may have been a response bias; perhaps people who used herbal products were more inclined to participate than nonusers, which may have resulted in an overestimate of the prevalence of herbal use.

On the other hand, some patients may not have recalled their use of herbals, which may have led to an underestimate of prevalence. The sample was small; with a larger sample, it would be possible to examine independent predictors of herbal product use in a multivariate model.

Despite these limitations, our findings suggest that a substantial number of patients at risk for interactions are taking herbal products and that their health care providers may not be aware of it. Patients in this anticoagulation clinic are regularly asked about their consumption of vitamin K-containing foods and nonprescription and prescription medication use; it would be logical to incorporate questions about herbal use as well. We recommend that health care workers routinely ask patients undergoing anticoagulation therapy about their use of herbal products.

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