

## RESEARCH LETTERS

**Families' Perceptions of Inpatient and Home Hospice Care at End-of-Life**

Over the past 10 years, studies of end-of-life care in hospitals and long-term care facilities have described a variety of problems.<sup>1,2</sup> So it is not surprising that many patients say that they would prefer to die at home rather than in a hospital.<sup>3,4</sup> Indeed, one national study of end-of-life care found that home hospice care produced higher family ratings of care compared with inpatient care.<sup>2</sup>

However, the landscape of inpatient care is changing rapidly, and many hospitals have created palliative care consulting services and specialized inpatient palliative care units. It is important to determine whether inpatient palliative care offers a high-quality alternative to home hospice care because a death at home is not possible for all patients. For instance, some patients lack adequate family support, and hospice is not available in all areas. Therefore, the goal of this study was to compare families' perceptions of the quality of end-of-life care provided by hospice in patients' homes with care provided by palliative care teams in an inpatient setting.

**Methods.** Retrospective telephone surveys were conducted with family members using the Family Assessment of Treatment at End-of-life (FATE), a 32-item telephone survey. Families of patients who received inpatient or outpatient care from 1 of 5 Department of Veterans Affairs (VA) medical facilities in the last month of life were eligible to participate.

We examined inpatient and home differences for the overall FATE score and domain scores using the rank sum test, and for single items we used the  $\chi^2$  test. To adjust for site, we used linear regression models for the overall and domain scores and logistic regression for single dichotomous items.

**Results.** Interviews were completed with families of 769 patients, of whom 347 (45%) died as inpatients with palliative care and 115 (15%) died at home with hospice care. Patients who died at home with hospice care did not differ from patients who died as inpatients with respect to age, ethnicity, or family relationship (spouse vs child vs other). However, the 2 groups differed with respect to site of death.

After adjusting for site, FATE scores were better for inpatients (adjusted mean scores, 61 vs 55;  $\beta=0.06$  [95% confidence interval {CI}, 0.02 to 0.10];  $P=.007$ ), although families of hospice patients were more likely to

report that patients died where they wanted to (96% vs 67%;  $\beta=-2.51$  [95% CI, -3.45 to -1.55];  $P<.001$ ). A particularly large difference was found for patients whose family member had more than 12 years of education (adjusted mean FATE score, 60 vs 49;  $\beta=0.12$  [95% CI, 0.05 to 0.18];  $P=.001$ ), family members of white patients (adjusted mean score, 62 vs 53;  $\beta=0.06$  [95% CI, 0.01 to 0.11];  $P=.02$ ), and spouses of patients (adjusted mean score, 63 vs 56;  $\beta=0.06$  [95% CI, 0.01 to 0.12];  $P=.03$ ).

**Comment.** Although many patients would prefer to die at home,<sup>3,4</sup> families of patients receiving palliative care in inpatient settings perceived care to be at least as good as that of patients who died at home with hospice care. In addition, families perceived patients' overall care to be better. It is possible that some of these patients had greater needs than a typical home hospice program is able to meet. It is also possible that the substantial burdens that families face in caring for home hospice patients<sup>5</sup> influence their perceptions of care.

It is important to note that this study was conducted in a VA population, which is atypical of the general US population. Also, VA hospitals are more likely to have palliative care programs compared with other hospitals.<sup>6</sup> Nevertheless, these data provide important preliminary evidence that palliative care in an inpatient setting can offer a reasonable alternative to care at home.

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## Habitual Chocolate Intake and Vascular Disease: A Prospective Study of Clinical Outcomes in Older Women

Cocoa, the principal ingredient of chocolate, is a rich source of flavonoids. Higher flavonoid intakes are associated with a lower risk of cardiovascular disease, and flavonoid-rich cocoa and chocolate can reduce blood pressure and improve endothelial function.<sup>1</sup> Interest in the potential of cocoa and chocolate to prevent cardiovascular disease has been stimulated by recent prospective cohort studies in which consuming more than 2.25 g/d of cocoa (average, 4.2 g/d)

was associated with a 50% lower risk of cardiovascular mortality.<sup>2,3</sup> Our objective was to investigate the relationship between chocolate consumption and atherosclerotic vascular disease (ASVD) events in a prospective study of older women followed up for 9.5 years. In formulating our prespecified analytical protocol, we hypothesized that the greatest benefit on ASVD risk would likely be for women with daily exposure to the cocoa flavonoids because, to date, much of the reported benefits of cocoa flavonoids on nitric oxide metabolism and endothelial function are short term.<sup>4</sup>

**Methods.** The participants were recruited in 1998 to a 5-year randomized controlled trial of calcium supplements as described previously.<sup>5</sup> At baseline, information on food and beverage consumption frequency, medical history and current medications as verified by their general practitioner, physical activity, and socioeconomic status were collected from 1216 women using previously validated questionnaires. The frequency of chocolate consumption was collapsed into the following 3 categories: less than 1 serving/wk (rarely), 1 to 6 servings/wk (weekly), and 7 or more servings/wk (daily). A serving of chocolate weighing 25 to 50 g containing 5% to 15% cocoa by weight is equivalent to a cocoa intake among frequent chocolate consumers of approximately 1 to 5 g/d. The presence of carotid focal plaques and common carotid artery intima-media thickness (CCA-IMT) were assessed once during the study by B-mode carotid ultrasonography. Plaque was defined as a clearly identified area of focal increased thickness ( $\geq 1$  mm) of the intima-media layer. The Western Australian Data Linkage System (WADLS) was used to assess clinical outcomes. This provides a validated record of every hospitalization (from the coded discharge record) and cause of death (from the death certificate) for residents of Western Australia. The use of this data system allows complete ascertainment of verified ASVD events independently of patient report, with the associated problems of loss to follow-up and inaccurate reporting.<sup>6</sup> Atherosclerotic vascular disease events were defined using diagnosis codes from the *International Statistical Classification of Diseases and Related Health Problems, 10th Revision, Australian Modification (ICD-10-AM)*.<sup>7</sup> The primary outcome was ASVD events causing either death or hospitalization retrieved from WADLS for each of the study participants from 1998 until 2008.

**Results.** Of the 1216 participants, 579 (47.6%) had less than 1 serving of chocolate weekly (rarely), 435 (35.8%) had between 1 and 6 servings/wk (weekly), and 202 (16.6%) had at least 7 servings/wk (daily). There were 158 ASVD events (27.3%) in the group that rarely consumed chocolate, compared with 90 events (20.7%) in the group that consumed chocolate weekly, and 42 events (20.8%) in the group that consumed chocolate daily. Because the demographic and outcomes data in the weekly and daily group were similar and because grouping them together to produce a "frequently" group split the cohort at the median frequency of chocolate ingestion, a comparison of the rarely ( $< 1$  serving/wk) and frequently ( $\geq 1$  serving/wk) groups was undertaken.