with stage 0-IV breast cancer from 2007-2009 enrolled in Medicare Part D. Women were stratified based on tumor stage and hormone-receptor status (positive, negative, unknown). We performed multivariable logistic regression to assess racial differences in the odds of AET initiation and two Cox proportional hazards models to determine the risk of AET discontinuation and overall mortality. Discontinuation was defined as ≥120 consecutive days without AET medication. All analyses were adjusted for sociodemographic, comorbidities, treatment (surgery, chemotherapy, radiotherapy), and prognostic factors (tumor stage, size, grade, lymph node involvement). Results: Of the 19,960 women diagnosed with breast cancer, 59.3% initiated AET within 12 months of diagnosis. Among women with hormone receptor-positive breast cancer 70.6% initiated AET compared to 20.7% of women with hormone receptor-negative or unknown. Among women with hormone-positive stage I-II breast cancer, blacks were less likely to continue AET compared to non-Hispanic whites (HR: 0.89, 95% CI 0.80–0.98). Among women diagnosed with stage IV, hormone receptor-positive breast cancer, Hispanic women were more likely to discontinue AET compared to non-Hispanic whites (HR: 1.68, 95% CI: 1.01–2.78). Women who initiated with the aromatase inhibitors had a 12% increased risk of discontinuation compared to women who initiated with tamoxifen (HR: 1.12, 95% CI 1.05–1.20). In all racial/ethnic groups, regardless of stage and hormone-receptor status, discontinuation of AET was associated with a significantly higher risk of all-cause mortality (HR: 1.72, 95% CI: 1.54–1.93). Conclusions: Over two-thirds of patients with hormone receptor-positive breast cancer initiated AET and a substantial proportion of hormone-receptor-negative women did as well. Discontinuation of AET was associated with a significantly higher risk of all-cause mortality regardless of hormone status and stage.

Premenopausal Breast Cancer: Exercise and Leukocyte Telomere Length


Leukocyte telomere length (LTL) may function as a marker of health, the immune system and cancer survival. We evaluated whether premenopausal breast cancer survivors (PBCS) that successfully increased exercise levels also increased LTL. This study is the first to describe LTLs in a population-based sample of PBCS before and after an exercise intervention. We analyzed LTL before and after the Exercise for Bone Health Intervention, a randomized, controlled trial of 273 premenopausal women 55 years of age or younger at diagnosis that started the intervention within 2 years of receipt of initial chemotherapy. This pilot analysis included 60 women with the greatest increase in exercise from pre to post intervention. Those with longer LTLs at pre-intervention (PRE) had LTLs that grew shorter during the study, however, they still had longer LTLs at post-intervention (POST) than those who started with shorter LTLs. The group whose LTLs shortened the most during the study were those with longer LTLs and more exercise at PRE, ANOVA across four levels P = 0.030. In multivariable regression models of LTL change adjusted for age and LTL at PRE, factors that were independently associated with LTLs that became shorter were older age (P = 0.017), longer telomeres at PRE (P = 0.0004), higher levels of exercise (P = 0.013), higher income (P = 0.011), feeling down-hearted and blue (P = 0.003), higher levels of sociability (P = 0.015), more chronic medical conditions (P = 0.018), and higher levels of insulin-like growth factor-1 at POST (P = 0.003). While this is a pilot sub-study and requires additional confirmation, we postulate that women accustomed to exercising and being highly sociable pre-diagnosis may have experienced a greater impact on their lifestyles post-diagnosis resulting in a more rapid rate of LTL shortening. We hypothesize that time to return to LTL homeostasis for YBCS may be dependent upon a combination of physical health and psychosocial networks pre and post diagnosis and the immune system may be an important moderator. Further studies combining new technology to improve the capture of exercise and psychosocial well-being, and monitor levels of inflammation are needed to determine whether lifestyle interventions can be used to impact biomarkers of health in YBCS.

Emerging Trends in Family History of Breast Cancer and Associated Risk

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The impact of the rise in breast cancer incidence associated with mammography diffusion on the prevalence of breast cancer family history is unknown, and may attenuate risk associations between family history and breast cancer. Methods: The proportions of women 40–74 years reporting a first-degree family history of breast cancer were estimated in the Breast Cancer Surveillance Consortium (BCSC, N = 1,170,900) from 1996–2012 and Collaborative Breast Cancer Study (CBCS, cases N = 23,400; controls N = 25,460) from 1987–2007. Breast cancer (ductal carcinoma in situ and invasive) relative risk estimates associated with family history and 95% confidence intervals (CI) were calculated using multivariable Cox proportional hazard (RCSC) and logistic regression (CBCS) models. Results: The proportion of women reporting a family history increased from 11% in the 1980s to 16% in 2010–13. Family history was associated with a 60% increased risk of breast cancer in the BCSC (hazard ratio = 1.61, 95% CI = 1.55–1.66) and CBCS (odds ratio = 1.66, 95% CI = 1.58–1.74), with relative risks decreasing with age. Trends in relative risks were not evident over time or stage of disease at diagnosis, except among older women (60–74) where estimates were attenuated in more recent years (P-trend = 0.08 for both cohorts). Conclusion: The proportion of women with a first-degree family history of breast cancer increased over time and by age, nonetheless breast cancer risk associations with family history were constant over time for women 40–59. First-degree family history of breast cancer remains an important breast cancer risk factor, especially for younger women, despite its increasing prevalence in the mammography screening era.
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