

Meeting abstract

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Impact of diet and exercise intervention on breast ductal fluid among overweight postmenopausal women

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Obesity and adulthood weight gain, operating through production of estrone in adipose tissue, inflammation, and obesity-related growth factors, increase breast cancer risk after menopause. Many studies have determined the systemic effects of excess adipose tissue on plasma and serum-based biomarkers, but few studies have determined the localized impact on biomarkers contained in breast ductal fluid.

We are currently conducting a pilot 12-week diet and exercise weight-loss intervention among overweight postmenopausal women to evaluate changes in ductal fluid as a result of the intervention. To date, five women completed the study. We successfully obtained breast ductal fluid both before and after the intervention from four of the five women. Fluid was transferred into tubes and frozen in a -80° freezer. We are currently conducting assay measurements of hormones and biomarkers contained in ductal fluid.

We observed changes in body composition and exercise parameters as a function of the intervention. Specifically, a 12% decrease in BMI (body-mass index), a 14% decrease in body fat mass, a 28% increase in aerobic fitness and 28% increase in muscle-strength occurred compared to baseline intervention measurements, among the women who completed the study. Our plans are to enroll five additional women, finish analyzing the ductal fluid biomarkers, and apply for a larger grant to expand the study.