

Collagen Alignment and Recurrence of Ductal Carcinoma *In Situ*

Conklin *et al.* _____ Page 138

Multiple features of the tumor microenvironment, including the orientation of collagen fibers, may influence breast cancer progression by facilitating cancer cell migration. In this cohort study of women diagnosed with ductal carcinoma *in situ* (DCIS) during 1995–2006 and followed an average of 15 years, Conklin and colleagues characterized DCIS lesions according to syndecan-1 expression and collagen fiber alignment using novel microscopy techniques. Although collagen alignment and stromal syndecan-1 expression did not predict recurrence, collagen fibers perpendicular to the duct perimeter were more frequently observed in DCIS lesions with features typical of poor prognosis.

Resistance Training and Markers of Breast Cancer Progression

Winters-Stone *et al.* _____ Page 146

Physical activity may be linked to better cancer survival, but the type of exercise and the conditions that optimize this benefit are poorly understood. Winters-Stone and colleagues pooled data from three yearlong clinical trials in breast cancer survivors to determine whether resistance exercise, prescribed for musculoskeletal health, could also reduce inflammatory markers and growth factors linked to cancer recurrence. In resistance-trained women, C-reactive protein significantly decreased from baseline compared with controls. Women who lost weight and/or gained muscle strength from resistance training had favorable shifts in several additional markers. Future trials should consider these conditions to optimize the benefits of exercise.

Mammography Screening and Histological Grade

Tabar *et al.* _____ Page 154

Concerns have been expressed that mammography screening preferentially benefits nonaggressive cancers, with little or no effect on mortality from more aggressive, rapidly growing tumors. Tabar and colleagues addressed this directly in a randomised trial of mammography screening by comparing mortality by histological grade of the cancer between those randomised to invitation to screening and the control group. There was a significant 35% reduction in mortality from the more aggressive grade 3 cancers and lesser reductions in mortality from grade 1 and 2 cancers. Thus, mammography screening confers a substantial reduction in deaths from more aggressive tumors.

Effect of Time to Diagnostic Testing on Screening Efficacy

Rutter *et al.* _____ Page 158

Timely evaluation of abnormal cancer screening results is considered an important health care priority, but the impact of delayed follow-up is understudied. This modeling study by Rutter and colleagues found that longer delays resulted in poorer outcomes, and that the impact of delays varied across breast, cervical, and colorectal cancers. These findings can be used to inform quality metrics for time to follow-up of positive tests that are geared toward improving patient outcomes, to maximize both the effectiveness and cost effectiveness of cancer screening programs.

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