PublisherInfo		
PublisherName	:	BioMed Central
PublisherLocation	:	London
PublisherImprintName	:	BioMed Central

Marker of increased cancer risk in benign breast disease

ArticleInfo		
ArticleID	:	3743
ArticleDOI	:	10.1186/bcr-2000-66706
ArticleCitationID	:	66706
ArticleSequenceNumber	:	15
ArticleCategory	:	Paper Report
ArticleFirstPage	:	1
ArticleLastPage	:	3
ArticleHistory	:	RegistrationDate : 2000–1–11 OnlineDate : 2000–1–11
ArticleCopyright	:	Current Science Ltd2000
ArticleGrants	:	
ArticleContext	:	1305833

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Keywords

Benign breast disease, increased cancer risk, TGF-β

Introduction

Transforming growth factor beta (TGF-β) inhibits the division of mammary epithelial cells, and loss ofreponse to TGF-β is a common event in tumor progression. Previous studieshave shown that the TGF-β-RII receptor is important in cell regulation byTGF-β. Breast epithelial hyperplastic lesions lacking atypia (EHLA) areassociated with increased breast cancer risk.

Aims

To investigate the expression of TGF-β-RII in EHLA and the risk of breast cancer.

Comments

Preliminary data that requires further confirmation. Of note, largeconfidence intervals were found in this study. If confirmed, TGF-β-RIIexpression may help in differentiating large numbers of women with benignbreast disease who are at increased risk of breast cancer and who maybenefit from chemopreventative intervention.

Methods

A nested case-control study of women from the Nashville Breast Study Cohort was coducted.Biopsy-confirmed EHLA with no history of breast cancer or atypicalhyperplasia who subsequently developed breast cancer (n= 54) were comparedwith controls with EHLA who did not develop breast cancer (n=115). Archivalparaffin-embedded breast biopsy specimens were analyzed byimmunohistochemistry with antibodies against TGF-β- RII.

Results

Women with EHLA and 25%-75% TGF-ß-RII positive cells or <25%TGF-β-RII positive cells had a 1.98-fold (95% CI = 0.95-4.1) and a3.41-fold (95% CI = 1.2-10) increased risk of subsequent breast cancer comparedto women in whom 75% of lesion cells were TGF-β-RII positive.

Discussion

Breast cancer risk was inversely correlated with proportion of cellsexpressing TGF-β-RII. These results, in combination with known histologicand epidemiologic risk factors, may better define the clinical manangement ofwomen with proliferative breast disease.

References

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