Novel basis identified for tamoxifen failure

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Tamoxifen may worsen breast cancer in a small subset of patients. Research published in BioMed Central's open access journal *Breast Cancer Research* suggests that in patients who show reduced or absent expression of the protein E-cadherin, commonly used anti-oestrogen drugs such as tamoxifen may promote more harmful cancer cell behaviour.

A team of researchers co-ordinated by Dr. Stephen Hiscox, from the Welsh School of Pharmacy at Cardiff University, investigated the selective oestrogen receptor modulator (SERM) tamoxifen on human breast cancer cells, comparing it to the direct effects of oestrogen withdrawal. Dr. Hiscox said, "Anti-oestrogens, such as tamoxifen, have been the mainstay of therapy in patients with oestrogen receptor positive (ER+) breast cancer and have provided significant improvements in survival. Our experimental studies suggest that in a certain group of patients, it may be much less effective, however, as it appear to promote an aggressive cell behaviour".

The authors found that tamoxifen can promote an invasive phenotype in ER+ breast cancer cells under conditions of poor cell-cell contact, a previously unknown effect of this drug. According to Dr. Hiscox, "This could have major clinical implications for those patients with tumours where there is inherently poor intercellular adhesion. In such patients, oestrogen deprivation with aromatase inhibitors (AIs) may be a more appropriate treatment".

E-cadherin is an intercellular adhesion protein important for maintenance of cell-cell adhesion and tissue integrity. The presence of functional oestrogen receptors has been shown to be necessary for its expression.

Source: BioMed Central