

New study

Investigating the relationship between steroid receptors and breast cancer risk

Later this year, a new study funded by the National Breast Cancer Foundation and The Cancer Council South Australia to examine the relationship between steroid receptors (oestrogen receptor, progesterone receptor, androgen receptor) and breast cancer risk will commence. The study is being conducted by researchers at the University of Adelaide in conjunction with BreastScreen SA, and has approval by the appropriate ethics committees.

Current hormonal therapies for the treatment of breast cancer target either the female sex hormone oestrogen or its mediator, the oestrogen receptor. Androgens, acting via the androgen receptor, also appear to play an important role in normal breast development and may protect against the development of breast cancer. Whereas oestrogens stimulate the growth of breast tumours, androgens inhibit their growth. The primary goal of this study is to determine the relative contributions of oestrogens and androgens, acting via the oestrogen receptor and androgen receptor respectively, in the development of breast cancer.

A novel aspect of this study is to assess malignant and non-malignant breast samples from archival material retained by BreastScreen SA. The Program stores mammograms and tissue biopsy material from women who have previously attended for assessment. With appropriate consent, this material can be accessed for research purposes. Malignant and non-malignant breast tissue samples will be selected by proceeding backwards through BreastScreen SA records, starting with the most recent records.

For women with non-malignant tissue specimens, invitations to participate in the study, including the consent form and questionnaire, would be sent through BreastScreen SA. For women with malignant tissue specimens, invitations to participate in the study would be sent through their General Practitioners, who would screen invitations to ensure that women were not approached where there were medical contra-indications.

This process would continue until the required number of participants was obtained (approximately 200 malignant and 560 non-malignant cases). Women who consent to the study would complete a questionnaire on reproductive measures. All relevant clinical data and tissue will be de-identified to ensure confidentiality and privacy.

The non-malignant and malignant tissue samples will be used to investigate the levels of the oestrogen receptor, progesterone receptor and androgen receptor, and to determine whether variations in the levels of these steroid receptors increase the risk of developing breast cancer and the subsequent rate of progression of the disease. Specifically, the aim is to assess whether levels of the steroid receptors in breast tumours are associated with the aggressiveness of the disease at diagnosis, as defined by nodal status and other clinical parameters. Another aim is to determine whether steroid receptor levels in non-malignant breast tissue are correlated with mammographic breast density, a well-established marker of breast cancer risk.

The present study will determine whether the levels of oestrogen receptor, progesterone receptor and androgen receptor expression are critical determinants of aggressiveness of breast cancer and whether there is a relationship between steroid receptor status and breast density. Demonstration of a relationship between steroid receptor status and breast density would have implications for development of chemo-preventive studies for women with increased risk of developing breast cancer.

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Any queries regarding this study and your patient's potential participation should be directed to the principal investigator of the study, Professor Wayne Tilley - phone (08) 8222 3225 or email wayne.tilley@imvs.sa.gov.au