Hormonal Factors in Breast Cancer

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Centuries ago breast cancer was a known, distinct entity, rare among most women, but common among nuns. It was thought that breast cancer occurred if the breasts were not used for their natural function. In the last few years international collaborations and the pooling worldwide information have supported many of the old beliefs and established that the hormones involved in reproduction play a central role in breast cancer.

It is well known that the longer women's reproductive lives - that is the earlier women experience puberty and the later they reach the menopause - the greater is their risk of breast cancer. Childbearing patterns are also key factors. The worldwide information on over 50,000 women with breast cancer from 30 countries has shown clearly that the risk of breast cancer decreases the more children women have and the longer they breastfeed. The higher incidence of breast cancer in developed than developing countries is largely due to the different childbearing and breastfeeding patterns.

Hormone levels and the use of hormonal therapies are also known to affect women's risk of developing breast cancer. Circulating levels of estrogen in postmenopausal women predict their risk of subsequently developing breast cancer. Obesity increases the risk of breast cancer in postmenopausal women, and this is due to the increasing levels of circulating estrogen with increasing obesity. Alcohol consumption also increases the risk of breast cancer and this, again, appears to be because alcohol increases circulating estrogen levels. As well, drugs that block the effect of estrogen are known to improve breast cancer survival.

Hormones taken for contraception or to relieve menopausal symptoms increase in the risk of breast cancer while women are, but there is no residual increase in risk 5-10 years after ceasing use. Therapies used for the menopause containing estrogen and progestagen cause a substantially greater increase in breast cancer that therapies containing estrogen alone.

- Given the overwhelming evidence about the importance of hormones in breast cancer, we should be focusing on how to use this information for prevention.

- However, to prevent breast cancer we need to understand exactly which hormones of reproduction act to cause a long-term reduction in the risk of breast cancer.