Breast Cancer
An Endocrinologist’s Perspective

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12 October 2000

Handout download:
http://www.oucom.ohiou.edu/dbms-witmer/gs-rpac.htm
I. Hormonal Contribution to development of the breast

II. Cancer of the breast

   Incidence

   Risk factors for the development of breast cancer

   \textit{BRCA1, BRCA2, BRCA3}......

III. Assessment of the patient with cancer of the breast

   Clinical staging

   The three most important prognostic factors

   Tumor size

   \textit{ER+} vs. \textit{ER-}

   Presence or absence of axillary lymph nodes

IV. Therapies for cancer of the breast

   Surgery

   Chemotherapy

   Radiation therapy

   Hormonal therapy/ endocrine ablation (surgical or chemical)

V. Uses of hormonal therapy or ablation

   Preventative

   Treatment of recurrence

   Special case: estrogen therapy in the patient with a strong family history of breast cancer or individual history of breast cancer

   Differences in breast cancers occurring in women treated with HRT (hormone replacement therapy)
VI. Estrogen analogs

Basic mechanism of steroid hormone action

Biochemical basis for agonist and antagonist actions

Effects are tissue specific

SERMs (selective estrogen receptor modulators)

Summary of experience with tamoxifen

Predictors of tamoxifen effectiveness

Other SERMs

VII. New targets for therapy

Intracellular hormone response machinery (post receptor)

Anti angiogenic agents

References


Figure 1. Treatment algorithm for advanced breast cancer in women.

Figure 2. Proposed carcinogenic action of estradiol and progesterone. Data from Liehr JG. Endocr Rev 2000;21:40-54

Figure 3. Association between HRT (A) tumor proliferation rate (S-phase fraction) and (B) primary tumor size according to ER status. The number above each bar indicates sample size. Abbrev.: OR, odds ratio.
Figure 4. Involvement of coactivator and corepressor on trans-activation and repression by the steroid hormone receptor.

Figure 5. Involvement of coactivator and corepressor on trans-activation and repression by the steroid hormone receptor.

Figure 6. Probability of RFS over time (months) for different conditions: VEGF-uPA- (8/42), VEGF-uPA- (31/89), VEGF-uPA+ (24/56).