

# Breast Cancer

## An Endocrinologist's Perspective

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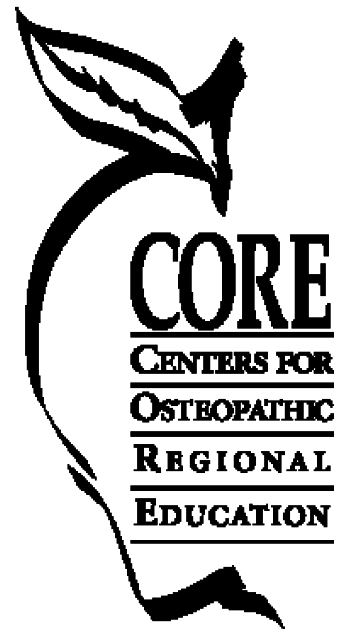
Ohio University College of Osteopathic Medicine

Athens

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I. Hormonal Contribution to development of the breast

II. Cancer of the breast

Incidence

Risk factors for the development of breast cancer

*BRCA1, BRCA2, BRCA3.....*

III. Assessment of the patient with cancer of the breast

Clinical staging

The three most important prognostic factors

Tumor size

ER + vs. 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

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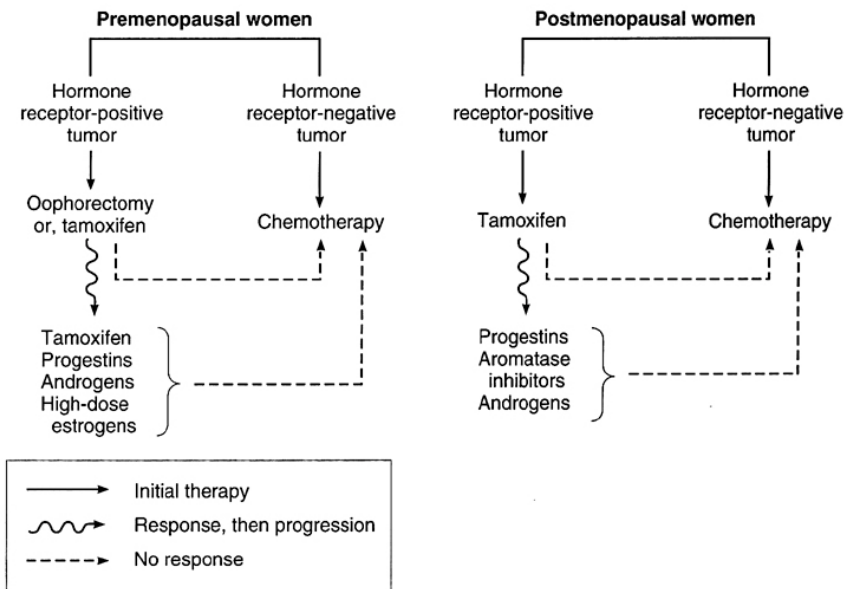


Figure 1 Treatment algorithm for advanced breast cancer in women.

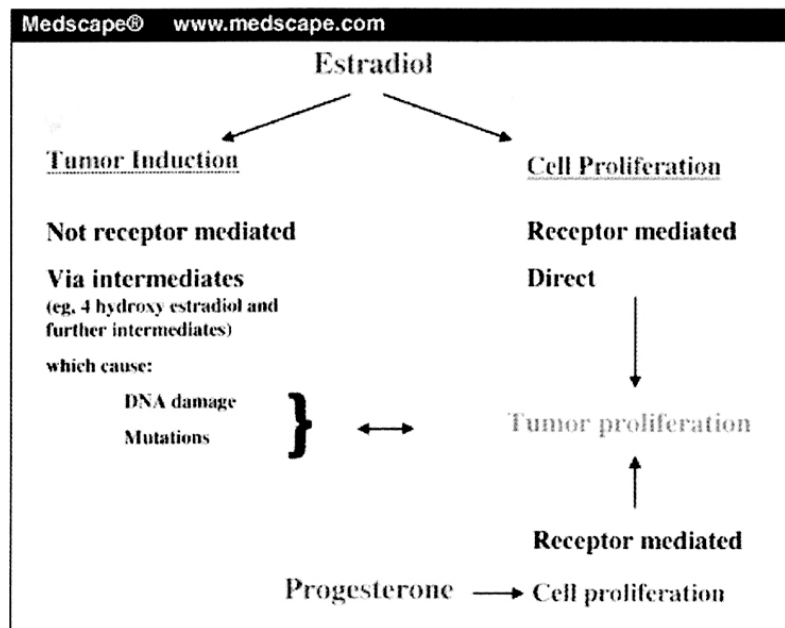


Figure 2. Proposed carcinogenic action of estradiol and progesterone. Data from Liehr JG. Endocr Rev 2000;21:40-54

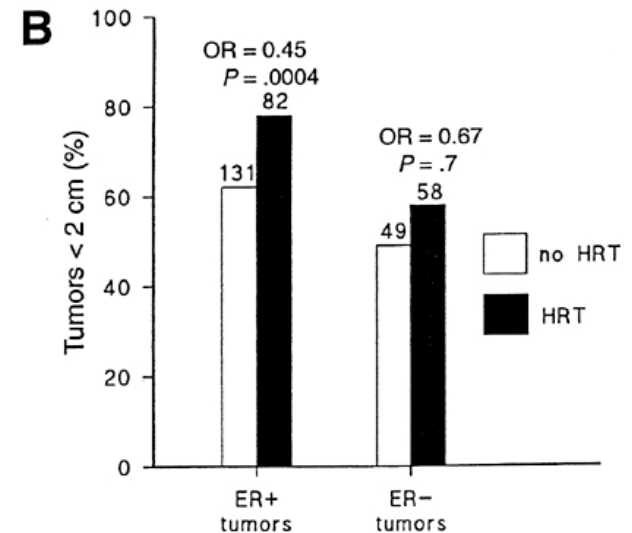
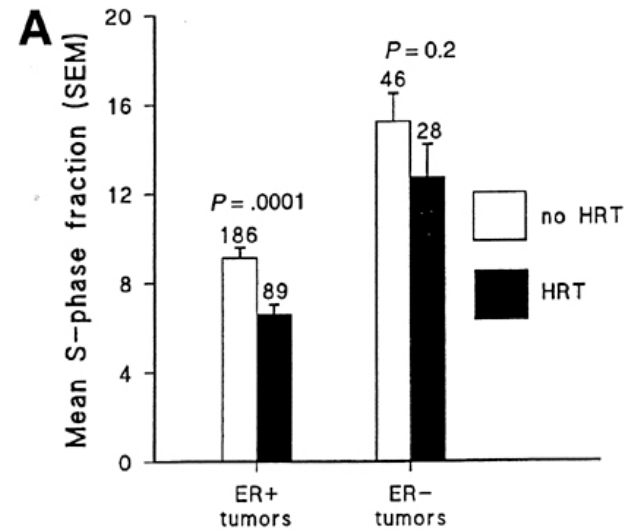


Figure 3. Association between HRT (A) tumor proliferation rate (S-phase fraction) and (B) primary tumor size according to ER status. The number above each bar indicates sample size. Abbrev.: OR, odds ratio.

Steroid receptor stabilizes the preinitiation complex for transcription

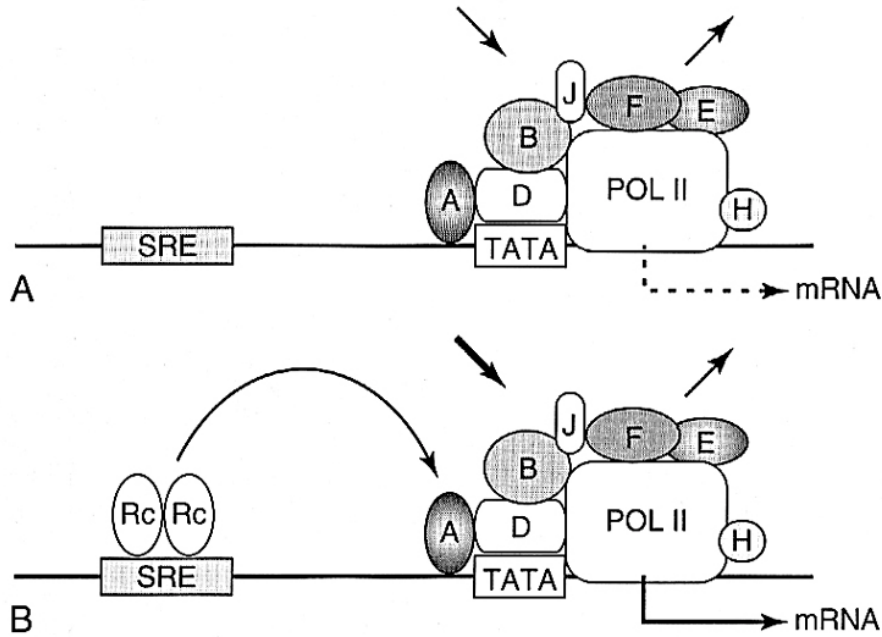


Figure 4

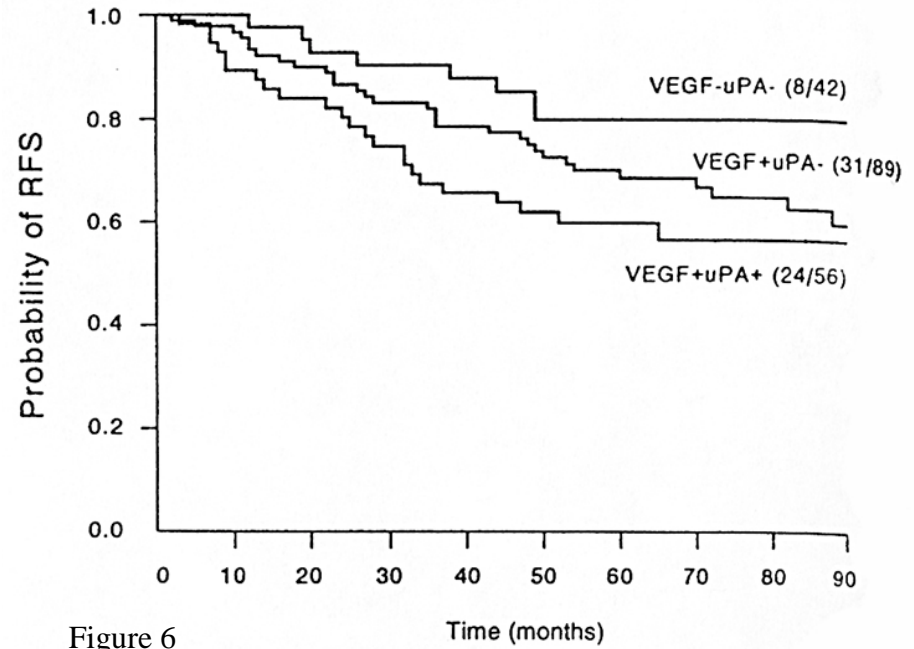


Figure 6

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

