

AROMATASE INHIBITORS-TYPES AND ADVANTAGES

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ABSTRACT

The role of aromatase inhibitors in the management of breast cancer has been promising as it markedly suppresses the production of estrogen. The inhibitors are very effective in postmenopausal women and used as the first-line therapy for hormone-sensitive breast cancer. The third-generation aromatase inhibitors are advantageous, having less adverse effects over other breast cancer drugs and they have also been recommended for use with tamoxifen. The aromatase inhibitors are of two different types; steroidal and nonsteroidal. Steroidal inhibitors are mechanism-based inhibitors that mimic the natural substrate and are irreversible, unlike non-steroidal inhibitors, which are reversible. The expression of aromatase occurs in a tissue-specific manner with a set of distinctive transcription factors. In tumorous breast tissue, the enzyme is overexpressed with the help of four different promoters, I.3, I.4, I.7 and II and in turn, the growth stimulatory effects of estrogen is magnified to very high levels. Aromatase inhibition approach is considered as the gold standard and hence, in this review, we have discussed different types of aromatase inhibitors with their advantages.

Keywords: Breast cancer, Aromatase inhibitor, Steroidal, Non-Steroidal, Natural inhibitors

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