

Advanced Therapy of Breast Cancer and Associated Factors: A Review

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ABSTRACT

Breast cancer is the most malignant disease in women worldwide and is curable in ~75–80% of patients with early-stage detection. Advanced breast cancer with neighbouring organ metastases is considered incurable with currently available therapies. In 2021, there were 2.3 million women diagnosed with breast cancer and 685000 deaths globally. As of 2020, there were 7.8 million women alive who were diagnosed with breast cancer in the past 5 years, making it the world's most prevalent cancer. Breast cancer is common with some 5-10% of all cases due to inherited mutations of BRCA1 and BRCA2 genes. Obesity, hormone therapy, alcohol, and over-expression of leptin in adipose tissue are its possible causes. Normally surgery, radiation therapy and chemotherapy allow a good prognosis where screening measures are in place. New hope in treatment measures includes adjuvant therapy, neoadjuvant therapy, and introduction of monoclonal antibodies and enzyme inhibitors. Breast cancer consists of 3 major tumour subtypes categorized according to oestrogen or progesterone receptor expression and *ERBB2* gene amplification. These three subtypes have distinct risk and treatment strategies. Therapy for each patient depends on tumour type, anatomic cancer stage, and patient preferences. Future therapeutic concepts in breast cancer aim at individualization of therapy as well as at treatment de-escalation and escalation based on tumour biology and early therapy response. Further treatment innovations, equal worldwide access to therapeutic advances remains the global challenge in breast cancer care.

Keywords: Cancer, breast cancer, leptin, BRCA1, BRCA2, antibodies, enzyme inhibitors

