

Breast cancer is acknowledged as an international priority in health care; it is currently the most common cancer in women worldwide with demographic trends indicating a continuous increase in incidence. Significant efforts and resources have been dedicated in order to obtain optimal strategies in breast cancer diagnosis and treatment over the last decades; increased population based screening and improved adjuvant therapies have allowed to reduce breast cancer mortality rates.

Despite these advances, metastatic breast cancer remains a leading cause of cancer-related mortality in women. The median survival for metastatic breast cancer varies widely based on subtype of tumor, sites of metastatic involvement and burden of disease; some patients experience long-term survival thanks to introduction of new and more effective therapeutic agents.

The primary goal of management for metastatic disease is alleviation of symptoms, maintenance or improvement in quality of life and prolongation of survival despite the possible toxicity associated with the treatments.

The selection of a therapeutic tailored approach depends upon both clinical factors and biologic markers such as hormone receptor status, human epidermal growth factor receptor 2 (HER2) overexpression and tumor burden.

However, the decision-making process for metastatic breast cancer always involves a detailed discussion with patients about the advantages and possible issues associated with each treatment strategy.

Most patients with metastatic disease receive systemic medical therapy including endocrine therapy, chemotherapy, biologic therapies, targeted and immunotherapy and supportive care measures even if a subset of patients with oligometastatic disease may benefit from a specific loco-regional treatment.

Endocrine therapy is favored over chemotherapy as initial treatment for metastatic patients with hormone receptor-positive and HER2-negative disease; specific targeted therapies for hormone receptor-positive cancers, such as cyclin-dependent kinase (CDK) 4/6 inhibitors, phosphoinositide 3-kinase (PI3K) inhibitors and inhibitors of mechanistic target of rapamycin (mTOR), are often added when using endocrine therapy.

HER2-directed therapy is adequate in patients with tumors that overexpress HER2. Chemotherapy is used in the hormone-insensitive metastatic disease; immunotherapy with the anti-programmed cell death protein 1 (PD-1) inhibitor is added to chemotherapy for those patients with advanced triple-negative disease. Poly ADP-ribose polymerase (PARP) inhibitor therapy is appropriate in HER2 negative metastatic patients with breast cancer susceptibility gene 1 or 2 (*BRCA1* or *BRCA2*) mutations and is used after progression on systemic therapy.

Accurate assessment of the response to treatments by physical examination, imaging and assay of serum tumor markers should aid in decision on therapies continuation and subsequent agents selection; the role of circulating tumor cells or cell-free DNA continue to be actively investigated.

This special book provides a set of research papers of high quality useful in order to optimize the clinical management of metastatic breast cancer by a multidisciplinary approach thanks to the contribution of important international Authors.

Initially, an overview on metastatic breast cancer, therapeutic strategies and some open issues is performed; thereafter, specific therapeutic strategies with single-agent and combination chemotherapy, endocrine therapy, targeted and immunotherapy as well as local treatment of metastasis and palliative care are investigated in detail.



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