

## The Future of Breast Cancer Management

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Breast cancer is the most common malignancy in women living in industrialized countries. Worldwide, it is still the most common cause of cancer death and the most common cause of death in women between 35 and 55 years of age. In Germany, every year approximately 55,000 women are diagnosed with breast cancer (in Austria 4,700). Undoubtedly, optimal breast cancer management means prevention first. Thus, future management should definitely emphasize education and teaching about possible reasons of breast cancer and factors that can be modified in life planning and life style as well as in family planning, nutrition, alcohol intake, weight control, physical activity, and hormone use.

We hope that mammography screening will further reduce the mortality of breast cancer. However, additional or even alternative imaging approaches such as high resolution ultrasound and magnetic resonance tomography must be further evaluated in order to enhance sensitivity and specificity and to enable also the younger age groups to participate in a validated breast cancer screening. Future breast cancer management should also include a stringent and potentially even risk-adapted screening program employing the appropriate imaging tools for women in different age groups.

For more than 10 years, we have now observed a decline in breast cancer mortality. The main reasons include on the one hand improved awareness, including self-awareness and also frequent non-screening mammographies, and thus earlier detection, but on the other hand also improved systemic therapies, particularly in the adjuvant situation. We learned from the Oxford overview [1] that by only applying older standard therapies, such as anthracycline-containing chemotherapy and tamoxifen, long term mortality in breast cancer patients can be reduced by more than half. The current data on taxanes, dose-dense chemotherapy, aromatase inhibitors, and trastuzumab promise further improvement in efficacy of adjuvant therapy and should encourage us to apply these treatment ad-

vances in a consequent and appropriate way. Thus, future management also includes consequent use of already established treatment modalities.

Knowledge about breast cancer as a heterogeneous disease is steadily increasing. This enables us to tailor our treatments also by using so-called targeted drugs. Targeted therapies are very promising since they have the potential of specifically attacking and eradicating tumor cells. However, each new and also 'old' drug should be carefully evaluated for their acute and long-term side effects. Novel agents often promise only a small advantage with regard to efficacy and/or toxicity, such that it remains questionable whether they should replace the previous old but effective gold standard for which we know long-term data on safety and efficacy. Current approaches of discarding established agents for their long-term toxicities and embracing novel targeted agents without valid long-term data may be premature. Future breast cancer management means individualized selection of specific treatment modalities for each patient by carefully considering size of the possible additional effects, type and severity of possible toxicities, patient characteristics such as comorbidities, life expectancy and personal preferences, and last but not least also cost-effectiveness.

Today, risk and therapy efficacy can better be predicted by biological markers, multiparameter gene profiling, and even new mathematical modeling. In addition, long-term therapy efficacy can be predicted quite well by tumor response to primary systemic therapy with pathological complete remission predicting for a favorable course of disease. In summary, by better identifying those patients who will really benefit from a specific therapy, efficacy can substantially be enhanced and unnecessary toxicity can be avoided. Future management of breast cancer means tailoring therapy by exploiting all possible parameters that can be obtained from each breast cancer patient and her/his tumor.

Local therapy has already been established at a high level in many centers. However, breast conserving therapy by less invasive surgical and radiotherapy approaches and – if necessary – by appropriate cosmetic reconstruction can be further improved. Primary systemic therapy, sentinel procedure, and localized radiotherapy are measures that will continue to be state of the art also in the near future.

In the articles in this issue of the *BREAST CARE*, nationally and internationally acknowledged experts describe their perspective of future breast cancer management with regard to imag-

ing and diagnosis, molecular imaging, surgical techniques, targeted drugs, prognostic and predictive factors, and adjuvant therapy.

## Reference

- 1 Early Breast Cancer Trialists' Collaborative Group (EBCTCG). Effects of chemotherapy and hormonal therapy for early breast cancer on recurrence and 15-year survival: an overview of the randomised trials. *Lancet* 2005;365:1687–717.