



# Breast cancer diagnosis and treatment: Asian perspective

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Breast cancer is the commonest cancer and the fifth leading cause of cancer deaths among women worldwide. Approximately 1.67 million women were diagnosed with breast cancer and over half a million women died from it in 2012. This corresponds to over quarter of all cancers and about 14.7% of all cancer deaths in women (1). Breast cancer incidence and mortality rates vary significantly across the globe (1). The incidence is much higher in Western Europe and North America compared to Asian region. In East Asian women breast cancer incidence is about 27.0 per 100,000 women, compared to over 91.1 per 100,000 women in Western Europe or Northern America (1).

Unfortunately, the incidence of breast cancer is increasing across most regions of the world (2). This increasing incidence is attributed to several factors like, use of screening mammography, social and life-style changes, obesity, economic development and change in reproductive behaviour (3). The incidence of breast cancer has doubled or tripled in Japan, Korea, Hong Kong and Singapore over past 40 years (4–6).

China is the largest and the most populous country in the world with an estimated population of nearly 1.42 billion (7). Breast cancer is the commonest cancer for women in China with 367,900 new cases diagnosed in 2018, accounting for about one fifth of all cancer cases in women in 2018 (7). With changes in reproductive practices, such as lower parity and reduced breastfeeding, social and lifestyle changes, rapid economic development along with nationwide family planning program started in 1970s are all likely to play a crucial part in significantly increasing breast cancer incidence in China.

Despite increasing breast cancer incidence, breast cancer mortality has been declining in western countries since 1980s. Early detection, use of breast cancer screening program and improved adjuvant treatment are greatly contributing to this declining breast cancer mortality rates (8). Similar declining breast cancer mortality trends are observed in Asian region, which are also most likely attributable to same factors (7).

Although several national breast cancer screening programs have been initiated by the Chinese government since the late 2000s but the coverage of these screening programs for the general population is limited. According to a report in 2010, the coverage of breast cancer screening was only 27.4% in Shanghai and 21.7% for all of China (9). Due to a low cost and huge population, clinical breast examination (CBE) is the primary breast cancer screening modality currently used in China (10). It has unclear efficacy unlike screening mammography in detecting asymptomatic early breast cancers.

Currently available evidence-based guidelines for breast cancer diagnosis and treatment are primarily based on studies from the western world. Unfortunately, there is significant lack of high quality randomised controlled studies from developing countries. With growing evidence of biological behaviour and genetics of breast cancer and its clinical implications, it is increasingly important to have clinical guidelines based on evidence from local studies.

As breast cancer incidence in China is likely to increase significantly in the future due to a variety of reasons, there is a need for local evidence-based guidelines for early diagnosis and treatment. China's large size and population,

make it harder for diagnostic and treatment resources to be universally available and affordable.

Systemic therapies for breast cancer have evolved over time with a variety of choices available now. Multiple randomised controlled studies and meta-analysis have supported the use for systemic therapy in the adjuvant as well as the advanced care settings. Treatment can be in the form of cytotoxic medications, targeted drugs or hormone modulation. The authors of the Chinese Society of Clinical Oncology (CSCO) guidelines (11) have done a commendable job in listing the systemic options available and highlighting the differences. These guidelines would serve the junior oncology registrars as well as the senior consultants.

One of the transformational changes in cytotoxic therapy regimens has been supportive care with regard to anti-nausea medications, bone marrow support and good treatment of serious adverse effects.

Metastasis to the bones is managed with bisphosphonates and RANKL modulators, along with radiotherapy. Also, metastasis to the brain is managed more aggressively with radiotherapy (including stereo-tactic radiosurgery), surgery and chemotherapy.

Biopsies will be transformed and from age old core biopsies to liquid biopsies and circulating tumour cells. These will change the way patients are diagnosed and monitored for signs of cancer recurrence.

Automation for various processes is moving ahead with better computing and artificial intelligence.

In this current issue, Jiang *et al.* (11) have compiled evidence-based CSCO guidelines for Breast Cancer Diagnosis and Treatment is an important step in this direction. These guidelines examine available evidence, rationalise resources and provide clinical guidelines for regional clinicians. Although, some recommendations are based on western studies, but increasing numbers of robust Asian studies would help in future CSCO guidelines.

These guidelines also provide a brief overview on technological advances and their role in breast cancer diagnosis and management. Currently, there are large number of studies in progress looking into breast cancer genetics, immunotherapy and role of artificial intelligence in improving outcomes in breast cancer management. Once established, this would help in taking steps beyond the traditional diagnostic approaches, which have been shown to be reliable, efficient and cost-effective. In this issue, Jiang and colleagues (11) have covered the most recent trends regarding the aspects of diagnostic modalities, management,

and prognosis in the field of breast cancer.

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