



EXECUTIVE SUMMARY

- ▶ This report covered 17,099 breast cancer patients who were diagnosed from 2006 onwards.
- ▶ The mean and median ages of the patients at diagnosis were 53.0 and 51.9, respectively.
- ▶ Around two-thirds (65.1%) of the patients were aged between 40 and 59.

Risk factors

- ▶ The 10 most common risk factors for developing breast cancer and the respective % of patients having each risk factor in the patient cohort:

| | % |
|---|------|
| Lack of exercise (<3hrs / week) | 77.6 |
| No breastfeeding | 65.8 |
| Being overweight / obese | 38.4 |
| High levels of stress (>50% of time) | 37.1 |
| No childbirth / first live birth after age 35 | 26.4 |
| Family history of breast cancer | 14.6 |
| Diet rich in meat/ dairy products | 14.1 |
| Early menarche (<12 years old) | 13.9 |
| Habit of drinking alcohol | 5.0 |
| Use of hormone replacement therapy | 3.8 |

Screening habits

- ▶ The overall patients' breast screening habits were poor. Less than a quarter of patients underwent regular breast self-examination (20.3%), mammography screening (18.2%), or breast ultrasound screening (16.2%).
- ▶ Breast screening habits decreased with increasing age.
- ▶ Patients who attained lower education levels or had lower household monthly income were less likely to conduct regular breast screening than those with higher education levels or higher incomes.
- ▶ A higher proportion (63.3% to 84.9%) of the patients aged 40 or above have never undergone mammography screening prior to cancer diagnosis.

Cancer characteristics, histological and biological characteristics

- ▶ The primary method of first cancer detection in the patient cohort was self-detection by chance (83.3%). More stage 0 or I cancers (34.0% and 13.4% respectively) were detected by mammography screening than stage III or IV cancers (3.0% and 1.8% respectively).
- ▶ After the onset of symptoms, a quarter (25.3%) of the patients who self-detected their cancers by chance waited more than three months before seeking first medical consultation.
- ▶ Among the patients in the cohort, 12.0% were diagnosed with in situ cancers, 67.9% were diagnosed with early stage cancers (stages I-IIb), and 16.6% were diagnosed with stage III or IV cancers.
- ▶ The mean size of invasive breast cancers for the patient cohort was 2.2 cm (standard deviation: ± 1.5 cm). Tumours larger than two cm in size were found in 47.5% of the patients. In the patient cohort, screen-detected cancers were significantly smaller than those self-detected by chance (mean: 1.2 vs. 2.3 cm).
- ▶ The mean size of in situ cancers for the patient cohort was 1.9 cm (standard deviation: ± 1.5 cm). Tumours larger than two cm in size were found in 33.8% of the patients.
- ▶ The following table shows the histological and biological characteristics of invasive and in situ cancers in the patient cohort:

| | Invasive tumours % | In situ tumours % |
|-----------------------------------|--------------------------|-------------------------|
| Histological type | | |
| Ductal | 86.8 | 93.1 |
| Others | 13.2 | 6.9 |
| Biological characteristics | | |
| ER+ | 77.8 | 80.8 |
| PR+ | 65.5 | 72.0 |
| HER2+ | 22.5 | 26.7 |
| Ki-67 index $\geq 14\%$ | 63.1 | 36.2 |
| ER-PR-HER2- | 11.7 | — |
| Lymphovascular invasion | 27.9 | — |

ER+/-: estrogen receptor positive/negative

PR+/-: progesterone receptor positive/negative

HER2+/-: human epidermal growth factor receptor 2 positive/negative

Treatment

- ▶ Of the 16,595 patients, 14.2% received care at private medical service, 52.1% received care at public medical service, and 33.7% received care at both private and public medical services.

- ▶ Combinations of treatments are usually used for treating breast cancer effectively. In general, the number of treatments received by the patients increased with increasing cancer stage.
- ▶ The following table shows the treatment utilisation in the patient cohort:

| | Total % | Treatment in private sector % | Treatment in public sector % | Stage | | | | | |
|--|-------------|-------------------------------------|------------------------------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | | | | 0 % | I % | IIA % | IIB % | III % | IV % |
| Surgery | 97.9 | 47.3 | 52.7 | | | | | | |
| Breast-conserving surgery | 40.0 | 63.8 | 36.2 | 52.7 | 47.3 | 34.8 | 23.9 | 13.5 | 8.5 |
| Mastectomy | 60.0 | 44.5 | 55.5 | 47.3 | 52.7 | 65.2 | 76.0 | 86.5 | 91.5 |
| Radiotherapy | 61.8 | 17.5 | 82.5 | | | | | | |
| In patients with breast-conserving surgery | 89.2 | 16.8 | 83.2 | 94.8 | 96.4 | 96.1 | 97.1 | 98.0 | 85.7 |
| In patients with mastectomy | 46.3 | 6.5 | 93.5 | 3.3 | 12.5 | 34.7 | 76.8 | 94.7 | 54.2 |
| Chemotherapy | 68.2 | 13.1 | 86.9 | — | 38.8 | 79.4 | 90.0 | 94.0 | 87.3 |
| Endocrine therapy | 67.6 | 9.2 | 90.8 | 11.6 | 77.7 | 75.2 | 78.0 | 75.9 | 79.5 |
| Anti-HER2 targeted therapy* | 61.1 | 10.1 | 89.9 | — | 44.3 | 66.4 | 68.6 | 75.0 | 76.9 |

* Among patients with human epidermal growth factor receptor 2 (HER2) positive only

Physical discomfort after treatment

- ▶ Among all types of treatment, chemotherapy was the most distressing treatment for patients: 50.7% of the patients reported having severe discomfort during or after chemotherapy.
- ▶ The following table shows the proportion of patients reported having severe discomfort and the most common forms of discomfort for different treatments:

| Treatment | Severe discomfort (% of patients) | Most common forms of discomfort (% of patients) |
|----------------------------|--------------------------------------|--|
| Chemotherapy | 50.7 | Vomiting (18.4), Loss of appetite (15.3), Hair loss (11.7) |
| Radiotherapy | 13.1 | Dry skin (13.3), Skin burns (10.4) |
| Surgery | 9.2 | Wound pain (16.8) |
| Endocrine therapy | 8.5 | Hot flushes (13.4) |
| Anti-HER2 targeted therapy | 6.0 | Fatigue (5.3) |

Psychosocial impact of diagnosis and treatment

- ▶ At diagnosis, 46.1% of the patients accepted the diagnosis with a calm or positive attitude. In contrast, 22.9% of the cohort could not accept the diagnosis.
- ▶ Half (51.4%) of the breast cancer survivors reported having a positive change in their outlook on life and about two-fifths (41.4%) reported having a positive change in their self-image.
- ▶ In the cohort, 79.1% of the patients reported having changes in their lifestyle after diagnosis with breast cancer. A change in diet (75.4%) was the most common lifestyle change, followed by increased exercise (62.4%).
- ▶ The two most common ways of managing negative emotions were direct verbal expression (54.1%) and diverting attention from the negative emotions (31.9%).
- ▶ Slightly more than half (54.9%) of the patients always or sometimes worried about recurrence. The level of worry about recurrence showed correlation with the patients' age at diagnosis; the proportion of patients who never worried about recurrence increased with increasing age, while the proportion of patients who always worried about recurrence decreased with increasing age.