

Use of primary and hospital care services in long-term breast cancer survivors: a longitudinal study based on real world data

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KEYWORDS: Breast cancer, survival, health services research

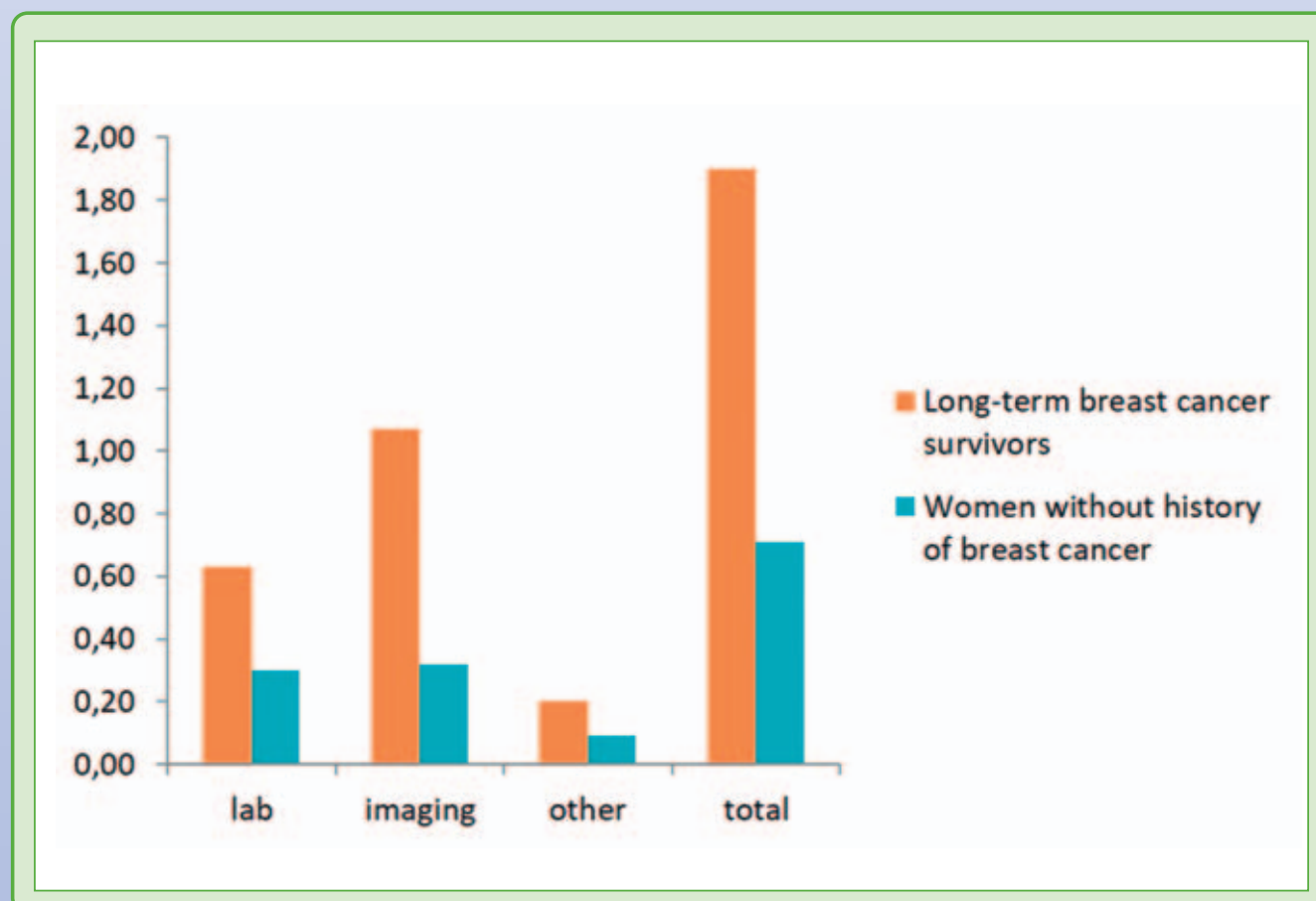
BACKGROUND

Long-term breast cancer survivors are those women who survive at least 5 years after primary breast cancer diagnosis. Cancer survivors' follow-up is an essential phase of cancer care that presents new challenges for health care organizations. The challenges focus on the role of each health care professional, the characteristics and frequency of visits and the tests performed. The aim of this study is to analyze the patterns of utilization of health care services in long-term breast cancer survivors and to compare them with those in women without history of breast cancer.

RESULTS

The total size of the study was 19328 women (6512 long-term breast cancer survivors /12816 women without history of breast cancer). The mean age at the beginning of follow-up was 68.6 years. Among long-term breast cancer survivors, 25% were survivors of ten years or more. At the end of follow-up, 87.4% of survivors and 91.7% of women with no history of breast cancer were alive. The rate of visits per woman/year in the group of survivors was 25.7 while in the control group it was 16.9. Breast cancer survivors had a higher rate of specialist care than the control group (4.8 vs 2.5 annual visits per women/year) and underwent more diagnostic tests (1.9 vs 0.8), especially imaging test (1.1 vs 0.4).

Figure 1. Annual crude rate for test performed (number of tests per woman/year).



MATERIAL AND METHODS

Observational study on a retrospective cohort of five Spanish regions. Women with a diagnosis of breast cancer and a survival period greater than ≥ 5 years were identified, as well as a sample of women matched by age and administrative health area without a cancer diagnosis. The use of primary and hospital care services were assessed during the follow-up period: 2012-2016. Healthcare visits and test were identified using electronic medical records. Rates of visits to primary care, to hospital as well as diagnostic tests per woman/year were calculated for long-term breast cancer survivors and for women with no history of breast cancer. The Charlson index was used to assess the burden of comorbidities in both groups.

Table 1. Characteristics of the women at baseline.

| Characteristics | Long-term breast cancer survivors N=6,512 | Women without history of breast cancer N=12,816 | p-value |
|--|--|--|---------|
| Age at the beginning of follow-up, mean (SD) | 68.6 (12.8) | 68.5 (12.7) | |
| Age groups, n (%) | | | |
| 30-49 years | 495 (7.6) | 974 (7.6) | |
| 50-59 years | 1,556 (23.9) | 3,063 (23.9) | |
| 60-70 years | 1,700 (26.1) | 3,345 (26.1) | |
| >70 years | 2,761 (42.4) | 5,434 (42.4) | |
| Survival time at the beginning of follow-up, n (%) | | | |
| 5-10 years | 4,872 (74.8) | - | |
| ≥ 10 years | 1,640 (25.2) | - | |
| Vital status at the end of follow-up, n (%) | | | |
| Alive | 5,662 (87.4) | 11,759 (91.7) | <0.001 |
| Exitus | 819 (12.6) | 965 (7.5) | |
| Diagnoses at the beginning of follow-up, mean (SD)* | 6.4 (6.9) | 5.2 (4.9) | <0.001 |
| Charlson index score, n (%)** | | | |
| 0 | 1,863 (23.8) | 9,491 (74.1) | <0.001 |
| 1 | 182 (2.8) | 1,158 (9.0) | |
| 2 | 2,388 (36.7) | 1,055 (8.2) | |
| ≥ 3 | 2,079 (31.9) | 1,112 (8.7) | |

* Diagnoses at the beginning of follow-up include the baseline breast cancer diagnosis for the survivor group and all other cancer codes that were in the primary care information system at the beginning of follow-up for both groups.

** The Charlson index was calculated using ICD9, ICD10 and ICPC-2 codes at the beginning of the follow-up using primary care databases.

Table 2. Healthcare utilization among long-term breast cancer survivors and women without history of breast cancer.

| | Long-term breast cancer survivors (N=6,512) | | Women without history of breast cancer (N=12,816) | |
|--|--|-------------------------------|--|-------------------------------|
| | Total Visits (n) | Annual visits per woman/year* | Total Visits (n) | Annual visits per woman/year* |
| Total visits to healthcare services | | | | |
| Visits Primary Care | 507,733 | 17.8 | 718,815 | 13.0 |
| Visits Hospital | 171,595 | 6.0 | 11,299 | 0.3*** |
| Tests | 54,123 | 1.9 | 45,270 | 0.8 |
| Total visits | 733,451 | 25.7 | 775,384 | 16.9*** |
| Visits to Primary Care Professional visited | | | | |
| GP | 228,373 | 8.0 | 437,530 | 7.9 |
| Nurse | 142,768 | 5.0 | 142,768 | 4.7 |
| Other professionals+ | 136,592 | 4.8 | 138,517 | 2.5 |
| Visits to hospital | | | | |
| Type of visit | | | | |
| Emergency | 17,033 | 0.6 | 7,249 | 0.2^ |
| Admissions | 14,889 | 0.5 | 4,050 | 0.1^ |
| Outpatient visits | 150,348 | 5.3 | - | - |
| Tests | 54,123 | 1.9 | 45,270 | 0.8 |
| Type of test | | | | |
| Lab | 17,969 | 0.6 | 16,680 | 0.3 |
| Imaging | 30,527 | 1.1 | 23,596 | 0.4 |
| Other | 5,627 | 0.2 | 4,994 | 0.1 |

* Total follow-up time for long-term breast cancer survivors was 28,484.0 years.

** Total follow-up time for women without history of breast cancer was 55,355.7 years.

+Other professional include: psychology, rehabilitation, visits to specialists and other professionals in Primary Care settings.

^ Rates referring to hospital visits were calculated including woman whose data was available only. The total follow-up time used in hospital visits rate is 45,877.3 years.

CONCLUSIONS

Long-term breast cancer survivors use health services more often than women of the general population, highlighting radiology and imaging test. The next steps are to study whether this use is in agreement with specific follow-up recommendations for breast cancer survivors and to study how comorbidities affect the management of long-term breast cancer survivors.