**Supplementary material**

**Table 1.** Baseline characteristics of 18,968 Danish breast cancer patients treated between 2010 and 2015.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Total (18,968) | SLNB (17,265) | ALND (1,703) |
|  | No (%) | No (%) | No (%) |
| Age, y |  |  |  |
| < 50 | 3,787 (20.0) | 3,289 (19.1) | 498 (29.2) |
| 50-59 | 5,483 (28.9) | 5,024 (29.1) | 459 (27.0) |
| 60-69 | 7,645 (40.3) | 7,114 (41.2) | 531 (31.2) |
| 70-79 | 2,053 (10.8) | 1,838 (10.7) | 215 (12.6) |
| Diagnosis |  |  |  |
| Ductal | 15,419 (81.3) | 13,919 (80.6) | 1,500 (88.1) |
| Lobular | 1,981 (10.4) | 1,881 (10.9) | 100 (5.9) |
| Other | 1,568 (8.3) | 1,465 (8.5) | 103 (6.1) |
| Tumour size, mm |  |  |  |
| ≤10 | 5,140 (27.1) | 5,026 (29.1) | 114 (6.7) |
| 11-20 | 8,564 (45.1) | 8,002 (46.3) | 562 (33.0) |
| 21-50 | 4,896 (25.8) | 3,971 (23.0) | 925 (54.3) |
| > 50 | 315 (1.7) | 218 (1.3) | 97 (5.7) |
| Unknown | 53 (0.3) | 48 (0.3) | 5 (0.3) |
| Grade |  |  |  |
| I | 5,058 (26.7) | 4,928 (28.5) | 130 (7.6) |
| II | 7,780 (41.0) | 7,162 (41.5) | 618 (36.3) |
| III | 4,321 (22.8) | 3,480 (20.2) | 841 (49.4) |
| Unknown | 1,809 (9.5) | 1,695(9.8) | 114 (6.7) |
| ER status |  |  |  |
| Positive | 16,463 (86.8) | 15,200 (88.0) | 1,263 (74.2) |
| Negative | 2,420 (12.8) | 1,993 (11.5) | 427 (25.1) |
| Unknown | 85 (0.4) | 72 (0.4) | 13 (0.8) |
| HER2 status |  |  |  |
| Normal | 16,167 (85.2) | 14,936 (86.5) | 1,231 (72.3) |
| Positive | 2,456 (12.9) | 2,016 (11.7) | 440 (25.8) |
| Unknown | 345 (1.8) | 313 (1.8) | 32 (1.9) |
| Macrometastases |  |  |  |
| Yes | 5,522 (29.1) | 3,840 (22.2) | 1,682 (98.8) |
| No | 13,446 (70.9) | 13,425 (77.8) | 21 (1.2) |

Patients are grouped into SLNB and ALND. Patients in the ALND group are patients in whom ALND was decided preoperatively based on the preoperative examination.

Supplementary table 2

Appendix 1

**Reasons for exclusion of patients:**

* Neoadjuvant treatment (n=1,201)
* No surgical treatment (n=120)
* No axillary dissection (n=60)
* Multifocal or ulcerating tumor (primary ALND) (n=27)
* Relapse of previous cancer or DCIS (n=25)
* DCIS/LCIS (n=23)
* Primary ALND with no reason noted (n=16)
* Previous surgery in breast/axil, therefore no SLNB (primary ALND) (n=14)
* Diagnostic excision biopsy or excision of DCIS which proved cancer, therefore primary ALND (n=12)
* Occult breast cancer (n=5)
* LN found with other imaging modality than US (n=5)
* Inflammatory breast cancer (primary ALND) (n=4)
* Other cancer in same breast/axil (n=4)
* Clinical metastasis to axil, nothing noted about US (n=4)
* Breast cancer found in relation to breast reducing surgery (n=2)
* No SLNB because of breast implants (primary ALND) (n=1)
* 2 macrometastases found in lumpectomy, nothing noted about SLNB (n=1)
* Patient from Greenland, no SLNB (n=1)
* Normal axil at time of diagnosis, alternative treatment for 1 year, clinical metastases at time of operation (n=1)
* Patient refrains from SLNB (primary ALND) (n=1)
* Tumor excision in other department showed breast cancer, hereafter unsuccessful fine needle aspiration x 2, primary ALND (n=1)
* Patient diagnosed in 2007, surgery in 2012 for unknown reasons (n=1)