**Supplementary Materials**

Supplementary Table 1. Covariates Included in the Study Design

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| **Diagnosis** | **ICD-10 code and definition** | **Diagnostic definition** |
| **Inclusion criteria** |  |  |
| Breast cancer | C50 | Initial diagnosis in 01/01/2011 - 12/31/2013 [entry date] |
| **Exclusion criteria** |  |  |
| Cancer | C50 | Diagnosis in 01/01/2002 - 12/31/2010 |
| C00, C01, C02, C03, C04, C05, C06, C07, C08, C09, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C30, C31, C32, C33, C34, C37, C38, C39, C40, C41, C43, C45, C46, C47, C48, C49, C51, C52, C53, C54, C55, C56, C57, C58, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C77, C78, C79, C80, C81, C82, C83, C84, C85, C88, C90, C91, C92, C93, C94, C95, C96, C97 | Diagnosis during one year before diagnosis of breast cancer |
| Surgeries | mastectomy, lumpectomy, axillary dissections | Breast cancer-related surgery during one year before diagnosis of breast cancer |
| Lymphedema | I89.0, I97.2, complete decongestive therapy | Diagnosis during one year before diagnosis and before the index date |
| Death |  | Reports of death before index date |
| **Exposure** |  |  |
| Breast cancer-related surgery | SLNB group | Lumpectomy or mastectomy with sentinel lymph node biopsy (SLNB) in one day [index date] |
| ALND group | Lumpectomy or mastectomy with axillary lymph node dissection (ALND) in one day [index date] |
| Reoperation group | More than one lumpectomy or mastectomy over 60 days after the index date [index date, index date + 60] |
| **Baseline covariates** |  | |
| **Neoadjuvant therapies** |  |  |
| Neoadjuvant radiotherapy\* |  | Radiotherapies between cohort entry date and index date |
| Neoadjuvant chemotherapy |  | Chemotherapies between cohort entry date and index date |
|  | Taxanes prescribed between cohort entry date and index date |
| **Comorbid conditions within one-year period before the initial breast cancer diagnosis** | | |
| Diabetes mellitus (both with and without complications) | E10, E11, E12, E13, E14 | |
| Chronic back pain | M51, M53, M54 | |
| Osteoarthritis | M15, M16, M17, M18, M19 | |
| Rheumatoid | M05, M06 | |
| Osteoporosis | M80, M81, M82 | |
| COPD | J43, J44 | |
| Dementia | F00, F01, F02, F03, G30 | |
| Schizophrenia | F20, F21 | |
| Depressive disorders | F32, F33 | |
| Anxiety disorders | F40, F41 | |
| Sleep disorder | G47, F51 | |
| Hyperlipidemia | E78 | |
| Hypertension | I10, I11, I12, I13, I15 | |
| Cardiovascular diseases | I05, I06, I07, I08, I09, I20, I21, I22, I23, I24, I25, I26, I27, I30, I31, I32, I33, I34, I35, I36, I37, I38, I39, I40, I41, I42, I43, I44, I45, I46, I47, I48, I49, I50, I51, I52 | |
| Renal failure | N17, N18, N19 | |
| Chronic liver diseases | K72, K73, K74, K75, K76, K77 | |
| Cerebrovascular disease | I60, I61, I62, I63, I64, I65, I66, I67, I68, I69 | |
| Anemia | D50, D51, D52, D53, D55, D56, D57, D58, D59, D60, D61, D62, D63, D64 | |
| **Charlson Comorbidity Index (score)** | | |
| Myocardial infarction | I21, I22, I252 | |
| Congestive heart failure | I099, I110, I130, I132, I255, I420, I425, I426, I427, I428, I429, I43, I50, P290 | |
| Peripheral vascular disease | I70, I71, I731, I738, I739, I771, I790, I792, K551, K558, K559, Z958, Z959 | |
| Cerebrovascular disease | G45, G46, I60, I61, I62, I63, I64, I65, I66, I67, I68, I69, H340 | |
| Dementia | F00, F01, F02, F03, G30, F051, G311 | |
| Chronic pulmonary disease | I278, I279, J40, J41, J42, J43, J44, J45, J46, J47, J60, J61, J62, J63, J64, J65, J66, J67, J684, J701, J703 | |
| Connective tissue disease | M05, M06, M315, M32, M33, M34, M351, M353, M360 | |
| (Rheumatologic disease) |
| Peptic ulcer disease | K25, K26, K27, K28 | |
| Mild liver disease | B18, K700, K701, K702, K703, K709, K713, K714, K715, K717, K73, K74, K760, K762, K763, K764, K768, K769, Z944 | |
| Moderate or severe liver disease | I850, I859, I864, I982, K704, K711, K721, K729, K765, K766, K767 | |
| Diabetes without complications | E100, E101, E106, E108, E109, E110, E111, E116, E118, E119, E120, E121, E126, E128, E129, E130, E131, E136, E138, E139, E140, E141, E146, E148, E149 | |
| Diabetes with complications | E102, E103, E104, E105, E107, E112, E113, E114, E115, E117, E122, E123, E124, E125, E127, E132, E133, E134, E135, E137, E142, E143, E144, E145, E147 | |
| Paraplegia and hemiplegia | G041, G114, G800, G801, G802, G81, G82, G830, G831, G832, G833, G834, G839 | |
| Renal disease | I120, I131, N030, N031, N032, N033, N034, N035, N036, N037, N038, N039, N050, N051, N052, N053, N054, N055, N056, N057, N058, N059, N18, N19, N250, Z490, Z491, Z492, Z940, Z992 | |
| Cancer | C00, C01, C02, C03, C04, C05, C06, C07, C08, C09, C10, C11, C12, C13, C14, C15, C16, C17, C18, C19, C20, C21, C22, C23, C24, C25, C26, C30, C31, C32, C33, C34, C37, C38, C39, C40, C41, C43, C45, C46, C47, C48, C49, C50, C51, C52, C53, C54, C55, C56, C57, C58, C60, C61, C62, C63, C64, C65, C66, C67, C68, C69, C70, C71, C72, C73, C74, C75, C76, C81, C82, C83, C84, C85, C88, C90, C91, C92, C93, C94, C95, C96, C97 | |
| Metastatic carcinoma | C77, C78, C79, C80 | |
| AIDS/HIV | B20, B21, B22, B24 | |
| **Demographic variables** | | |
| Age group (y) |  | < 35, 35-44, 45-54, 55-64, 65-74, 75-84, ≥ 85 |
| Sex |  |  |
| Type of insurance | NHIS | Classified based on annual health premiums proportional to household incomes |
| Medical Aid |
| **Time-varying covariates** |  |  |
| **Adjuvant therapies** |  |  |
| Adjuvant radiotherapy |  | No. of adjuvant radiotherapies during follow-up |
| Adjuvant chemotherapy |  | No. of adjuvant chemotherapies during follow-up |
| **Outcome** |  |  |
| Lymphedema | I89.0, I97.2 | Followed up for 4 y since the index date |
| All-cause mortality |  | Followed up for 4 y since the index date |
|  | |  |

\* Excluded in the main analysis due to lack of patients after propensity score matching.

ICD-10 = International Classification of Diseases 10th revision; SLNB = sentinel lymph node biopsy; ALND = axillary lymph node dissection; COPD = Chronic obstructive pulmonary disease; NHIS = National Health Insurance Service.