Breast Cancer in Older Women

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University of Liverpool - UK
"I disclose no conflict of interest"
Life expectancy:

- 40 yrs in 1900
- 80 yrs in 2000

> 60 yrs subjects increase at a 1% rate/yr.

The geriatric population has tripled over the last century.

1983-2003:
- > 65 yrs x 2
- > 85 yrs x 4
In the next 50 years:

> 65yr old will double

2 people of working age for each person > 65yr (compared to the 4 as of today)

An ageing population
healthy life yrs at age 65 - EU
Increased life expectancy

China has the largest elderly population (92 millions)

http://www.worldmapper.org/index.html
older patients are special

BMJ 2012;344:12
Cancer Incidence with Age – UK Figures

Figure Two: Number of new cases and age-specific incidence rates for all malignant neoplasms*, by sex, UK, 2004

http://info.cancerresearchuk.org/cancerstats/
Figure 1.1: Numbers of new cases and age-specific incidence rates by sex, stomach cancer, UK 2002
Age-specific Kidney ca. - UK

Figure 1.2: Numbers of new cases and age specific incidence rates, by sex, kidney cancer, UK 2004
Age-specific Pancreatic ca. - Japan
Age-specific Colon ca. - Japan
With the exception of cervical ca., all cancers prevail in the elderly population.

<table>
<thead>
<tr>
<th>Probability of Developing Invasive Cancers Over Selected Age Intervals</th>
<th>Birth to 39 (%)</th>
<th>40 to 59 (%)</th>
<th>60 and older (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>All Sites†</strong></td>
<td>Male: 1.36 (1 in 73)</td>
<td>8.03 (1 in 125)</td>
<td>18.55 (1 in 55)</td>
</tr>
<tr>
<td></td>
<td>Female: 1.92 (1 in 52)</td>
<td>9.01 (1 in 111)</td>
<td>19.20 (1 in 55)</td>
</tr>
<tr>
<td><strong>Bladder‡</strong></td>
<td>Male: .02 (1 in 4603)</td>
<td>.21 (1 in 4801)</td>
<td>.26 (1 in 386)</td>
</tr>
<tr>
<td></td>
<td>Female: .01 (1 in 9557)</td>
<td>.08 (1 in 1270)</td>
<td>.10 (1 in 950)</td>
</tr>
<tr>
<td><strong>Breast</strong></td>
<td>Male: .44 (1 in 229)</td>
<td>.55 (1 in 180)</td>
<td>.51 (1 in 195)</td>
</tr>
<tr>
<td></td>
<td>Female: .03 (1 in 361)</td>
<td>.26 (1 in 380)</td>
<td>.46 (1 in 215)</td>
</tr>
<tr>
<td><strong>Colon &amp; rectum</strong></td>
<td>Male: .06 (1 in 167)</td>
<td>.16 (1 in 59)</td>
<td>.22 (1 in 45)</td>
</tr>
<tr>
<td></td>
<td>Female: .01 (1 in 9557)</td>
<td>.10 (1 in 95)</td>
<td>.13 (1 in 77)</td>
</tr>
<tr>
<td><strong>Leukemia</strong></td>
<td>Male: 1.45 (1 in 70)</td>
<td>1.14 (1 in 87)</td>
<td>1.00 (1 in 100)</td>
</tr>
<tr>
<td></td>
<td>Female: 1.00 (1 in 100)</td>
<td>1.14 (1 in 95)</td>
<td>1.00 (1 in 100)</td>
</tr>
<tr>
<td><strong>Lung &amp; bronchus</strong></td>
<td>Male: .31 (1 in 322)</td>
<td>.27 (1 in 368)</td>
<td>.27 (1 in 368)</td>
</tr>
<tr>
<td></td>
<td>Female: .69 (1 in 144)</td>
<td>1.57 (1 in 64)</td>
<td>2.60 (1 in 38)</td>
</tr>
</tbody>
</table>

*Figures are based on all-cause mortality. Based on cancer cases diagnosed during 1998-2000. The “1 in” statistic and the inverse of the percentage are identical.
†All sites excluding non-melanoma skin cancers and in situ carcinomas except urinary bladder.
‡Includes invasive and in situ cancer cases.

Source: American Cancer Society, Surveillance Research, 2004

Cancer affects older people.
Estimated risk of developing breast cancer by age:

- Risk up to age 25: 1 in 15,000
- Risk up to age 30: 1 in 1,900
- Risk up to age 40: 1 in 200
- Risk up to age 50: 1 in 50
- Risk up to age 60: 1 in 23
- Risk up to age 70: 1 in 15
- Risk up to age 80: 1 in 11
- Risk up to age 85: 1 in 10
<table>
<thead>
<tr>
<th>morphology</th>
<th>&lt;40</th>
<th>40-54</th>
<th>55-64</th>
<th>65-74</th>
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<td>ductal</td>
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<td>71.9</td>
<td>71.1</td>
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<td>11.4</td>
<td>12.6</td>
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<td>4.0</td>
<td>3.8</td>
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<td>1</td>
<td>6.2</td>
<td>15.7</td>
<td>16.1</td>
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<td>2</td>
<td>39.9</td>
<td>49.1</td>
<td>52.5</td>
<td>55.9</td>
<td>57.3</td>
</tr>
<tr>
<td>3</td>
<td>46.6</td>
<td>29.8</td>
<td>27.1</td>
<td>24.6</td>
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<td>In situ</td>
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<td>13.5</td>
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<tr>
<td>I</td>
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<td>38.6</td>
<td>42.8</td>
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### ER/PR status

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<td>negative</td>
<td>30.1</td>
<td>16.1</td>
<td>15.1</td>
<td>13.3</td>
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</table>
Comparison of the 5-year relative survival for female breast cancer patients in Europe and the USA.
Cancer survival in Europe 1999–2007 by country and age: results of EUROCASE-5—a population-based study

Roberta De Angelis, Milena Sant, Michel P Coleman, Silvia Franceschi, Paolo Boffi, Daniela Parrinavuzza, Annalisa Ferma, Otto Vissers, Hermann Brenner, Eva Airdun, Magdalena Birsch-Liastic, Gerd Engholm, Alice Nerstede, Sabine Siersling, Franco Berrino, Riccardo Capocaccia

Summary

Background Cancer survival is a key measure of the effectiveness of health-care systems. EUROCASE—the largest cooperative study of population-based cancer survival in Europe—has shown persistent differences between countries for cancer survival, although in general, cancer survival is improving. Major changes in cancer diagnoses, treatment, and rehabilitation occurred in the early 2000s. EUROCASE-5 assesses their effect on cancer survival in 29 European countries.

55-64 65-74 ≥75
Breast Cancer Women >75 years are less likely to receive:
• axillary dissection (84% vs. 93%, P = 0.0003)
• radiotherapy (40% vs. 54%, P = 0.0003)
• surgery (71% vs. 84%, P < 0.0001)
• chemotherapy (9% vs. 28%, P < 0.0001)
• guideline therapy (31% vs. 54%, P < 0.0001)

Owusu C. Breast Cancer Res Treat 2007
No Level I evidence
Limited retrospective data
Extrapolation from younger series
No RTC on older women
Under-representation of elderly patients into surgical trials

Enrollment of Older Patients in Cancer Treatment Trials in Canada: Why is Age a Barrier?

By Karen W.L. Yee, Joseph L. Poter, Lam Pho, Benny Zee, and Lillian L. Siu

Purpose: To evaluate the enrollment of older patients (≥ 65 years) in Canadian cancer treatment trials and compare accrual of older patients in Canada and the United States.

Patients and Methods: A retrospective analysis of the number of older patients enrolled in National Cancer Institute of Canada Clinical Trials Group (NCIC CTG) treatment trials between 1993 and 1996 was performed. These rates were compared with the corresponding rates in the general population of patients who were ≥ 65 years old and had cancer, obtained from Statistics Canada, and those published by the Southwest Oncology Group (SWOG) in the United States.

Results: Between 1993 and 1996, 4,174 patients were enrolled onto 69 NCIC CTG trials of 16 tumor types. Older patients accounted for 22% of trial enrollees, compared with 58% of the Canadian population with cancer. This discrepancy existed in all cancer types except for multiple myeloma. The percentages of older patients enrolled were also analyzed by study type: 15% in adjuvant trials, 25% in metastatic trials, 29% in investigational new drug trials, 24% in phase I trials, and 21% in supportive care trials. The overall proportion of older patients enrolled onto Canadian trials (22%) was slightly lower than that in SWOG trials (25%).

Conclusion: Age remains a barrier for accrual onto cancer treatment trials, even when reimbursement is not an issue. Strategies to overcome this barrier, including the implementation of trials specifically tailored to patients aged ≥ 65 years, are prudent in light of our aging population.


As the population ages and life expectancy increases, diseases in individuals 65 years of age and older will have an increasing impact on the Canadian healthcare system. In 1996, the life expectancy at birth for Canadians was 78.6 years (ie, 75.7 years for men and 81.4 years for women).1 Unfortunately, since 1981, the incidences of cancer have continued to increase with increasing age. In the year 2000, 60,300 new cases of cancer (46%) and 38,200 cancer deaths (59%) were estimated imposed restrictions, high burden of comorbidity, physician attitudes and knowledge, patient preferences, and social, geographic, or financial barriers.

Although Canada and the United States share many cultural similarities, there are significant differences between their healthcare and social programs. The Canadian healthcare system, unlike the American system, provides reimbursement for healthcare costs regardless of whether they are incurred while
Barriers to Clinical Trial Participation by Older Women With Breast Cancer

By M. Margaret Kemeny, Bercedis L. Peterson, Alice B. Kornblith, Hyman B. Muss, Judith Wheeler, Ellis Levine, Nancy Bartlett, Gini Fleming, and Harvey J. Cohen

Purpose: Although 48% of breast cancer patients are 65 years old or older, these older patients are severely under-represented in breast cancer clinical trials. This study tested whether older patients were offered trials significantly less often than younger patients and whether older patients who were offered trials were more likely to refuse participation than younger patients.

Patients and Methods: In 10 Cancer and Leukemia Group B institutions, using a retrospective case-control design, breast cancer patients eligible for an open treatment trial were paired: less than 65 years old and ≥ 65 years old. Each of the 77 pairs were matched by disease stage and treating physician. Patients were interviewed as to their reasons for participating or refusing to participate in a trial. The treating physicians were also given questionnaires about their reasons for offering or not offering a trial.

Results: Sixty-eight percent of younger stage II patients were offered a trial compared with 34% of the older patients (P = .0004). In multivariate analyses, disease stage and age remained highly significant in predicting trial offering (P = .0003), when controlling for physical functioning and comorbidity. Of those offered a trial, there was no significant difference in participation between younger (56%) and older (50%) patients (P = .67).

Conclusion: In a multivariate analysis including comorbid conditions, age and stage were the only predictors of whether a patient was offered a trial. The greatest impediment to enrolling older women onto trials in the setting of this study was the physicians’ perceptions about age and tolerance of toxicity.


Although the incidence of cancer increases with age, and in the United States 60% of cancers occur in people older than 65 years, there are significantly fewer older cancer patients entered on clinical trials compared with 48% of breast cancer patients older than 65 years in the United States population (based on the Surveillance.
Under-representation of elderly patients into surgical trials

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Total no. of participants</th>
<th>Percentage of patients</th>
<th>Proportion of incident cancer patients in US in 2000 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race/ethnicity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>12,112</td>
<td>86.57</td>
<td>82.15</td>
</tr>
<tr>
<td>Hispanic</td>
<td>476</td>
<td>3.40</td>
<td>4.24</td>
</tr>
<tr>
<td>African-American</td>
<td>1,108</td>
<td>7.92</td>
<td>11.23</td>
</tr>
<tr>
<td>Asian/Pacific islander</td>
<td>260</td>
<td>1.86</td>
<td>2.16</td>
</tr>
<tr>
<td>American Indian/Alaskan native</td>
<td>35</td>
<td>0.25</td>
<td>0.22</td>
</tr>
<tr>
<td>Total</td>
<td>13,991</td>
<td>100</td>
<td>100 (687,183)</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21–44</td>
<td>2,313</td>
<td>16.52</td>
<td>4.91</td>
</tr>
<tr>
<td>45–54</td>
<td>3,950</td>
<td>28.23</td>
<td>11.82</td>
</tr>
<tr>
<td>55–64</td>
<td>3,929</td>
<td>28.08</td>
<td>20.84</td>
</tr>
<tr>
<td>65–74</td>
<td>2,883</td>
<td>20.61</td>
<td>30.78</td>
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<tr>
<td>75+</td>
<td>916</td>
<td>6.55</td>
<td>31.64</td>
</tr>
<tr>
<td>Total</td>
<td>13,991</td>
<td>100</td>
<td>100 (687,183)</td>
</tr>
</tbody>
</table>

Stewart JH Ann Surg Oncol 2007
External Validity of a Trial Comprised of Elderly Patients With Hormone Receptor–Positive Breast Cancer

Willernien van de Water, Mandy Kiderlen, Esther Bastiaanet, Sabine Siesling, Rudi G. J. Westendorp, Cornelis J. H. van de Velde, Johan W. R. Nortier, Caroline Seynaeve, Anton J. M. de Craen, Gerrit-Jan Liefers

Manuscript received July 31, 2013; revised January 28, 2014; accepted February 4, 2014.

Correspondence to: Gerrit-Jan Liefers, MD, PhD, Department of Surgical Oncology, Leiden University Medical Center, Albinusdreef 2, PO Box 9600, 2300 RC Leiden, The Netherlands (e-mail: g.j.liefers@lumc.nl).

Background

Inclusion in trials is selective, and thus results may not be generalizable to the general population. The aim of this study was to investigate the external validity of randomized clinical trial outcomes for elderly breast cancer patients.

Methods

We compared characteristics and outcomes of breast cancer patients (n = 1325) who participated in a randomized clinical trial (Tamoxifen Exemestane Adjuvant Multinational trial) with unselected breast cancer patients of comparable age from the general population (n = 1056). Dutch patients aged 65 years or older at diagnosis of hormone receptor–positive breast cancer without distant metastases, with either nodal involvement, a tumor size exceeding 3 cm, or a 1 to 3 cm histological grade III tumor, who completed local therapy were included. The other hazards models were used to assess the association between covariates and further outcomes.

not for general distribution
GO SAFE Study

Geriatric Oncology Surgical Assessment and Functional Recovery after Surgery

@GOSAFEStudy

Multicenter international observational explorative prospective cohort study
STUDY DESIGN

INCLUSION CRITERIA
- patients ≥75 years old
- solid tumours
- elective surgery

PRIMARY END POINT
postop functional recovery 3 and 12 months

SECONDARY END POINTS
- postoperative morbidity and mortality
- mortality at 3 and 12 months after surgery
- Quality of Life at 3 and 12 months
- Identification of prognostic factors for functional recovery after surgery
Long-term outcomes:

still missing (discharge, 1-month)

1-year outcomes ?

long-term quality of life ?

return to the community ?
EURECCA-EUSOMA

Available for analysis: N = 41,871 patients – Data from 27 units – 7 countries (2003-2012)

Selection for analyses: invasive, non-metastatic, surgical treatment – Based on pTNM stage (clinical stage used if pT/pN missing)

Exclusion:
• 4779 in situ
• 774 metastasized
• 2106 missing stage
• 653 treatment unknown

N = 33,559

Variations in compliance to quality indicators by age for 41,871 breast cancer patients across Europe: A European Society of Breast Cancer Specialists database analysis

Mandy Kiderlena,b,c, Antonio Ponti d,e, Mariano Tomatis d,e, Petra G. Boelena,b, Esther Bastiaanette,a,b,c, Robin Wilsond,f, Cornelis J.H. van de Veldea,b,* , Riccardo A. Audisioa,d,g,h, and the eusomaDB Working Group1


Available at www.sciencedirect.com

journal homepage: www.ejcancer.com
patients/unit

Breast unit (#)

% of all patients
age distribution

mean age: 59.8 years
SD 12.9 years
All units: 17,376 (88.6%) patients had RT
Range between units 72% - 97%

Multivariable $P < 0.001$
BCS+RT
age stratified

No statistical difference between units for patients aged<40 (p = 0.99)

Multivariable P for difference between units in the other age strata:
<0.001
“guidelines adherence”
locoregional therapy

All units: 29,235 (85.5%) patients had guideline-adherent locoregional treatment

Range between units 62%-96%

Multivariable P < 0.001
“guidelines adherence”
age-stratified

Multivariable P for difference between units in each age stratum:

<0.001
BC - therapeutic options by age group

60-65yr 66-70yr 71-75yr 76-80yr 80-85yr >85yr

Surgery 89.3% 86.6% 84.9% 75.8% 54.5% 26.2%

RT 88.9% 86.6% 85.0% 78.2% 69.1% 11.0%

CT 33.2% 23.7% 15.1% 7.6% 2.8% 1.0%

Treatment for ER-

96.5% 98.4% 94.6% 93.9% 91.3% 64.7%

Unpublished data NW England
Tam, an anti-oestrogen drug...

Treatment well tolerated

The cancer would shrink or fail to progress in 80% women

TAM became a standard treatment for BC in the elderly:

42% pts >70yrs

55% pts >80yrs

Figure 22: Variation with age at diagnosis in the number of cases undergoing surgical treatment

Figure 24: Variation in adjuvant treatment with age group for all cases submitted to BCCOM in 2002–2004 with known treatment
Validity of Adjuvant! Online program in older patients with breast cancer: a population-based study


Summary

Background Adjuvant! Online is a prediction tool that can be used to aid clinical decision making in patients with breast cancer. It was developed in a patient population aged 69 years or younger, and subsequent validation studies included small numbers of older patients. Since older patients with breast cancer differ from younger patients in many aspects, the aim of this study was to investigate the validity of Adjuvant! Online in a large cohort of unselected older patients.

Methods We included patients from the population-based FOCUS cohort, which included all consecutive patients aged 65 years or older who were diagnosed with invasive or in-situ breast cancer between Jan 1, 1997, and Dec 31, 2004, in the southwestern part of the Netherlands. We included all patients who fulfilled the criteria as stated by Adjuvant! Online: patients with unilateral, unicentric, invasive adenocarcinoma; no evidence of metastatic or residual disease; no evidence of T4 features; and no evidence of inflammatory breast cancer. We entered data from all patients with the “average for age” comorbidity status (model 1) and with an individualised comorbidity status (model 2).
Geographical Variations
1995-2005    Stage I-II

DOI 10.1007/s10549-011-1892-5

Epidemiology

Surgical treatment of early stage breast cancer in elderly:
an international comparison

M. Kiderlen · E. Bastiaanenet · P. M. Walsh · N. L. Keating · S. Schrodi ·
J. Engel · W. van de Water · S. M. Ess · L. van Eycken · A. Miranda ·
L. de Munck · C. J. H. van de Velde · A. J. M. de Craen · G. J. Liefers

Received: 16 November 2011/ Accepted: 18 November 2011/Published online: 27 November 2011
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Abstract Over 40% of breast cancer patients are diagnosed above the age of 65. Treatment of these elderly patients will probably vary over countries. The aim of this study was to make an international comparison (several 204,885 patients were included. The proportion of patients not receiving any surgery increased with age in many countries; however, differences between countries were large. In most countries more than half of all elderly
Geographical Variations

NO axillary surgery
Geographical Variations

relative survival
Impact of omission of surgery on survival of older patients with breast cancer


Departments of Surgery and Gerontology and Geriatrics, Leiden University Medical Centre, Leiden, Department of Geriatric Medicine, Rijnland Ziekenhuis, Leiderdorp, Department of Research, Comprehensive Cancer Centre, and Department of Geriatric Medicine, Diakonessenhuis Utrecht, Utrecht, MIRA Institute of Technical Medicine and Biomedical Technology, University of Twente, Enschede, and Department of Internal Medicine, Haga Hospital, The Hague, The Netherlands

Correspondence to: Dr M. E. Hamaker, Department of Geriatric Medicine, Diakonessenhuis Utrecht/Zeist/Doorn, Professor Lorentzlaan 76, 3707 HL Zeist, The Netherlands (e-mail: mhamaker@diakhuis.nl)

Background: Older patients with breast cancer are often not treated in accordance with guidelines. With the emergence of endocrine therapy, omission of surgery can be considered in some patients. The aim of this population-based study was to investigate time trends in surgical treatment between 1995 and 2011, and to evaluate the effects of omitting surgery on overall and relative survival in older patients with resectable breast cancer.

Methods: Patients aged 75 years and older with stage I–III breast cancer diagnosed between 1995 and 2011 were selected from the Netherlands Cancer Registry. Time trends of all treatment modalities were evaluated using linear regression models. Changes in overall survival were calculated by Cox regression. Relative survival was calculated using the Ederer II method.

Results: Overall, 26,292 patients were included. The proportion of patients receiving surgical treatment decreased significantly, from 90.8 per cent in 1995 to 69.9 per cent in 2011 (P < 0.001). Multivariable analysis showed that overall survival did not change over time (hazard ratio 1.00 (95 per cent confidence interval (c.i.) 0.99 to 1.00) per year); nor did relative survival (relative excess risk 1.00 (0.98 to 1.02) per year).
NO surgery

More PET in the Netherlands over the last 15 years
NO surgery

No decreased overall- and relative-survival
Predictors and Outcomes of Completion Axillary Node Dissection Among Older Breast Cancer Patients

Sara H. Javid, MD\textsuperscript{1}, Hao He, PhD\textsuperscript{1}, Larissa A. Korde, MD, MPH\textsuperscript{2}, David R. Flum, MD, MPH\textsuperscript{1}, and Benjamin O. Anderson, MD\textsuperscript{1}

\textsuperscript{1}Departments of Surgery, University of Washington, Seattle, WA; \textsuperscript{2}Medicine, University of Washington, Seattle, WA

ABSTRACT

Background. The role of completion axillary lymph node dissection (ALND) for older women who had sentinel lymph node-positive (SLN+) invasive breast cancer is unclear. We examined factors predictive of ALND and the association between ALND, adjuvant chemotherapy administration, and survival.

Methods. Using the Surveillance, Epidemiology, and End Results (SEER)-Medicare database, we reviewed records of women age $\geq 65$ diagnosed with stage I/II breast cancer from 1998–2005. Adjusted Cox proportional hazards and multivariate logistic regression were used to identify patient and disease variables associated with ALND, and

Conclusions. ALND for older patients with SLN+ breast cancer is not associated with improved 5-year all-cause or breast cancer-specific survival. Younger age, fewer comorbidities, and estrogen receptor-negative (ER-) status were more strongly associated with receipt of chemotherapy than ALND. Consideration should be given to omitting ALND in older patients, particularly if findings of ALND will not influence adjuvant therapy decisions.

INTRODUCTION

Nearly half of all breast cancer cases diagnosed each
Surgery versus primary endocrine therapy for operable primary breast cancer in elderly women (70 years plus) (Review)

Hind D, Wyld L, Beverley C, Reed MW

THE COCHRANE COLLABORATION®

This is a reprint of a Cochrane review, prepared and maintained by The Cochrane Collaboration and published in The Cochrane Library 2006, Issue 3

http://www.thecochranelibrary.com
### Overall Survival

**Surgery+ET vrs PET**

**Review:** Surgery versus primary endocrine therapy for operable primary breast cancer in elderly women (70+).

**Comparison:** 02 Surgery plus endocrine therapy versus primary endocrine therapy

**Outcome:** 01 Survival - overall

<table>
<thead>
<tr>
<th>Study or sub-category</th>
<th>Surgery n/N</th>
<th>PET n/N</th>
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<tr>
<td>CRC</td>
<td>159/225</td>
<td>187/230</td>
<td>0.79 [0.63, 0.96]</td>
<td>55.42</td>
<td></td>
</tr>
<tr>
<td>GRETA</td>
<td>130/239</td>
<td>144/235</td>
<td>0.99 [0.77, 1.25]</td>
<td>42.37</td>
<td></td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>464</td>
<td>465</td>
<td>0.86 [0.73, 1.01]</td>
<td>97.79</td>
<td></td>
</tr>
<tr>
<td>Total events: 289 (Surgery), 331 (PET)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity: Ch² = 2.04, df = 1 (P = 0.15), I² = 50.9%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect: Z = 1.88 (P = 0.06)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>02 ER positive only</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nottingham 2</td>
<td>8/53</td>
<td>14/94</td>
<td>0.28 [0.28, 2.32]</td>
<td>2.21</td>
<td>0.80</td>
</tr>
<tr>
<td>Subtotal (95% CI)</td>
<td>53</td>
<td>94</td>
<td>0.28 [0.28, 2.32]</td>
<td>2.21</td>
<td>0.80</td>
</tr>
<tr>
<td>Total events: 8 (Surgery), 14 (PET)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity: not applicable</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect: Z = 0.41 (P = 0.68)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>517</td>
<td>559</td>
<td>0.73 [0.73, 1.00]</td>
<td>100.00</td>
<td>0.86</td>
</tr>
<tr>
<td>Total events: 297 (Surgery), 345 (PET)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for heterogeneity: Ch² = 2.05, df = 2 (P = 0.36), I² = 2.5%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Test for overall effect: Z = 1.91 (P = 0.06)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Favours Surgery + ET** **Favours PET**
# Local Disease Control

## Surgery + ET vrs PET

### Review:
Surgery versus primary endocrine therapy for operable primary breast cancer in elderly women (70+).

### Comparison:
02 Surgery plus endocrine therapy versus primary endocrine therapy

### Outcome:
04 Local disease control

<table>
<thead>
<tr>
<th>Study or sub-category</th>
<th>Surgery (n/N)</th>
<th>PET (n/N)</th>
<th>Peto OR (PD) 95% CI</th>
<th>Weight %</th>
<th>Peto OR (PD) 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>CRC</td>
<td>36/225</td>
<td>115/230</td>
<td>0.25 [0.19, 0.32]</td>
<td>69.59</td>
<td></td>
</tr>
<tr>
<td>GRETA</td>
<td>27/239</td>
<td>111/235</td>
<td>0.35 [0.25, 0.57]</td>
<td>30.41</td>
<td></td>
</tr>
</tbody>
</table>

Total (95% CI):

- Total events: 63 (Surgery), 226 (PET)
- Test for heterogeneity: $\chi^2 = 2.90$, df = 1 ($P = 0.09$), $I^2 = 65.5\%$
- Test for overall effect: $Z = 11.02$ ($P < 0.00001$)

Favours Surgery + ET  
Favours PET
When to use Primary Endocrine Therapy?

1. Converting mastectomy into BCS
2. Prehabilitation
3. Non-operable patients (???)
Primary Endocrine Therapy

Compliance is ~ 50%

Resistance to TAM (up to 50%)

Duration of response 2-3 years
UK life expectancy at 65 reaches record level

Published: Tuesday, 21 November 2006

Life expectancy at age 65 in the United Kingdom has reached its highest level ever for both men and women, according to figures released by National Statistics today.

Men aged 65 could expect to reach 81 and women to 84 if mortality rates remained the same as they were in 2003-05.

Within the United Kingdom, life expectancy varies by country. The highest expectations of life at age 65 occurred in England at 16.8 years for men and 19.6 years for women and the lowest in Scotland at 15.5 years and 18.4 years respectively. The equivalent figures for Wales and Northern Ireland are a little lower than those for England.

Life expectancy at birth is also at its highest level for both males and females. Boys and girls born in the United Kingdom could expect on average to live to 76.6 years and 81.0 years of age respectively.

The increase in life expectancy among older adults has been particularly dramatic in recent years. Between 1980-82 and 2003-05 life expectancy at age 65 in the United Kingdom increased by 3.7 years for males and 2.5 years for females. Around one-third of this increase occurred over the last five years.
Surgery
Surgery: 1st choice treatment
Surgery to the breast

?? Mastectomy ??? Lumpectomy ??

not “evidence based”: Fisher & Veronesi

safe margins & 20-30% breast volume

feasibility of RT “social” mastectomy

patient’s request cosmetics
Breast reconstruction in elderly women breast cancer: A review

Lauren Walton a, Koshy Ommen b, Riccardo A. Audisio a,c,∗

a University of Liverpool, UK
b Department of Plastic & Reconstructive Surgery, Whiston Hospital, Prescot, UK

c Department of Surgery, St. Helens & Knowsley Teaching Hospitals, UK

SUMMARY

Introduction: The elderly population is rapidly increasing, and with cancer, particularly breast cancer, being most prevalent in this group, its management is becoming increasingly important. A major aspect of breast cancer treatment and subsequent quality of life is the opportunity for reconstructive surgery. This is particularly important as survival rates are improving so a larger proportion of patients are living with the long term consequences of their treatment. Evidence has shown that age itself is not a risk factor for poor surgical outcomes, but concern over this causes surgeons to be less likely to request or accept reconstruction.

Methods: Literature searches using keywords ‘breast reconstruction’ and ‘elderly’ were carried out on PubMed, Scopus and Google Scholar. Results were limited to English language, and then manually searched to exclude irrelevant articles. Duplicates were removed and a series of articles were reviewed.

Results: Surgery was well tolerated in elderly patients, with complication rates comparable to a younger group. Autogenous tissue produced better outcomes than implant reconstruction in areas such as functioning and emotional wellbeing, patients with reconstructive surgery showed better comparison than those without.

Discussion: The research on this topic is limited and only available in a few publications. In their results, those without any comparison between these series cannot be drawn. The available patient’s frailty and do not define which patients should be offered reconstruction. Despite this, the evidence does show that autogenous tissue produces better outcomes than implants.
DSS for axillary surgery vs not
Tailored Breast Surgery

axillary recurrence: “a surgical failure”
morbidity of axillary dissection...?

SLNB
low axillary sampling
Axillary surgery  Y/N

Is Axillary Lymph Node Dissection Necessary in Elderly Patients with Breast Carcinoma Who Have a Clinically Uninvolved Axilla?

Gabriele Martelli, M.D.1
Rosalba Miceli, Ph.D.2
Giuseppe De Palo, M.D.1
Danila Coradini, Ph.D.3
Bruno Salvadori, M.D.4
Roberto Zucali, M.D.5
Emanuele Galante, M.D.1
EttoRE Marubini, Ph.D.6

BACKGROUND. Axillary dissection in elderly patients with early-stage breast carcinoma who do not have palpable axillary lymph nodes is controversial because of the associated morbidity of the surgery, reduced life expectancy of the patients, and efficacy of hormone therapy in preventing recurrences and axillary events.

METHODS. The authors performed a retrospective analysis of 671 consecutive patients with breast carcinoma who were age ≥ 70 years and who underwent conservative breast surgery with axillary dissection (172 patients) or without axillary dissection (499 patients). Tamoxifen always was given. The effects of axillary dissection compared with no axillary dissection on breast carcinoma mortality and distant metastasis were analyzed using multiple proportional-hazards regression models. Because the assignment to axillary treatment was nonrandom, covariate adjustments were made for baseline variables that influenced the decision to perform axillary dissection and for prognostic factors.

RESULTS. The crude cumulative incidence curves for breast carcinoma mortality and distant metastasis did not appear to differ significantly between the two groups (P = 0.530 and P = 0.840, respectively). The crude cumulative incidences of axillary lymph node occurrence at 5 years and 10 years were 4.4% and 5.9%, respectively (3.1% and 4.1%, respectively, for patients with pT1 tumors).

CONCLUSIONS. Elderly patients with breast carcinoma who have no evidence of axillary lymph node involvement may be treated effectively with conservative surgery and tamoxifen. Immediate axillary dissection is not necessary but should be performed in the small percentage of patients who later develop overt axillary
fit – vulnerable - frail
Definition of frailty is crucial in:

- Designing Clinical Studies/Trials
- Consenting patient
- Individualising treatment
- Predicting outcome
- Comparing series
Patient’s preference (?)
Tailored Breast Surgery
Key points

Awareness

Phase IV Trials
“Geriatric oncology: a multidisciplinary approach in a global environment”

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