

Is Surgical Management Compromised in Elderly Patients with Breast Cancer?

Harold J. Wanebo, M.D.,* Bernard Cole, Ph.D.,* Maureen Chung, M.D.,*
Michael Vezeridis, M.D.,* Barbara Schepps, M.D.,† John Fulton, Ph.D.,‡
and Kirby Bland, M.D.†

From the Department of Surgery, Brown University at Roger Williams Medical Center, the Rhode Island Hospital,† and the Department of Health,‡ State of Rhode Island, Providence, Rhode Island*

Objective

The suggestion that breast cancer management is compromised in elderly patients had prompted our review of the results of policies regarding screening and early detection of breast cancer and the adequacy of primary treatment in older women (≥ 65 years of age) compared to younger women (40 to 64 years of age).

Summary Background Data

Although breast cancer in elderly patients is considered biologically less aggressive than similar staged cancer in younger counterparts, outcome still is a matter of stage and adequate treatment of primary cancer. For many reasons, physicians appear reluctant to treat elderly patients according to the same standards used for younger patients. There is even government-mandated alterations in early detection programs. Thus, since 1993, Medicare has mandated screening mammography on a biennial basis for women older than 65 years of age compared to the current accepted standard of yearly mammograms for women older than 50 years of age. Using State Health Department and tumor registry data, the authors reviewed screening practice and management of elderly patients with primary breast cancer to determine the effects of age on screening, detection policies (as reflected in stage at diagnosis), treatment strategies, and outcome.

Methods

Data were analyzed from 5962 patients with breast cancer recorded in the state-wide Tumor Registry of the Hospital Association of Rhode Island between 1987 and 1995. The focus of the data collection was nine institutions with established tumor registries using AJCC classified tumor data. Additional data were provided by the State Health Department on screening mammography practice in 2536 women during the years 1987, 1989, and 1995.

Results

The frequency of mammographic screening for all averaged 40% in 1987, 52% in 1987, and 63% in 1995. In the 65-year-old and older patients, the frequency of screening was 34% in 1987, 45% in 1989, and 48% in 1995, whereas in the 40- to 49-year-old age group, the frequency of mammography was 47% in 1987, 61% in 1989, and 74% in 1995

($p < 0.001$). There was a lower detection rate of preinvasive cancer in the 65-year-old and older patients, 8.8% versus 13.7% in patients within the 40- to 64-year-old age group ($p < 0.001$). There was a higher percentage of treatment by limited surgery among elderly patients with highly curable Stage IA and IB cancer with 26.6% having lumpectomy alone versus 9.4% in the younger patients. Five-year survival in that group was significantly worse (63%) than in patients treated by mastectomy (80%) or lumpectomy with axillary dissection and radiation (95%, $p < 0.001$). A similar effect was seen in patients with Stage II cancer.

Conclusions

Breast cancer management appears compromised in elderly patients (older than 65 years of age). Frequency of mammography screening is significantly less in elderly women older than 65 years of age. Early detection of preinvasive (curative cancers) is significantly less than in younger patients. The recent requirement by Medicare of mammography every other year may further reduce the opportunity to detect potentially curable cancers. Approximately 20% of patients had inferior treatment of favorable stage early primary cancer with worsened survival. Detection and treatment strategy changes are needed to remedy these deficiencies.

The incidence of breast cancer is increasing with the aging of the American population. Currently, 48% of all patients diagnosed with breast cancer are women 65 years of age and older. The age-specific incidence for breast cancer in women age 65 years and older is 1400 per 100,000 compared to 750 cases per 100,000 in the women 50 to 65 years of age.¹

Breast cancer in elderly women is becoming a major health problem. Although there is some controversy about the biology of breast cancer in the elderly, a general consensus is that age and stage-related survival is not different in the elderly patients compared to that in their younger cohorts, except for those younger than 40 years of age, who are thought to have a worse prognosis.¹⁻⁶ Although breast cancer in elderly patients commonly is diagnosed at a more advanced clinical stage,⁷ this may be counterbalanced by the fact that patients in the groups 70 years of age and older more frequently are found to have positive estrogen and progesterone receptors, which generally auger for a better prognosis.⁵ Tabor et al.^{8,9} examined survival rates of women in the 5th, 6th, and 7th decades with localized and regional breast cancer and found them to be the same. Breast cancer in elderly patients, however, is diagnosed at a more advanced clinical stage.^{7,10,11} In part, this may be because of the delay in diagnosis secondary to the lack of mammographic screening for this population. The Jacobson Foundation has shown that <30% of women older than 70 years of age are screened regularly with mammography.¹² Factors influencing the decision for screening include the cost of

screening coupled with Medicare's refusal to pay for annual mammography for this population and perhaps a natural reluctance among elderly patients to seek this type of screening as a regular part of their overall health care.

Clinical management of elderly patients also appears compromised. Elderly patients are much less likely to be entered into clinical trials that require additional chemotherapy and radiation.^{10,11} There are inconsistent applications of surgery as well as adjuvant radiation therapy and chemotherapy in elderly patients. A review by August et al.¹³ reports that 98% of women younger than 65 years of age received standard therapy for breast cancer (appropriate use of either lumpectomy, radiation, axillary dissection, or mastectomy), whereas only 81% of patients older than 65 years of age receive standard surgical care. In a series of 82 elderly patients, Kessler and Seton¹⁴ report that 24 patients had simple mastectomy or partial mastectomy only. Elderly patients also are treated more commonly with less intensive local therapy (*i.e.*, lumpectomy without radiation or simple mastectomy without axillary dissection).^{13,14} Elderly patients also are less likely to receive adjuvant hormone or chemotherapy treatment.^{1,15}

Several studies have compared surgical complications in elderly patients with their younger counterparts, and in the absence of serious comorbid disease, elderly patients tolerate standard surgical breast procedures as well as do the younger patients.^{13,16} Major risk factors are cardiovascular or more extended thoracic, aortic, or intraperitoneal procedures, all of which have associated additive effects on mortality.^{1,17} Patients without these comorbid factors should be expected to have <2% rate of mortality from low-risk disease versus >50% rate of mortality in high-risk patients (with >26 points according to Goldman's criteria based on cardiac risk in noncardiac surgery patients).¹⁷ The goals of cancer care for elderly patients with breast cancer should include a plan for long-term control

Presented at the 108th Annual Meeting of the Southern Surgical Association, December 1-4, 1996, Palm Beach, Florida.

Address reprint requests to Harold J. Wanebo, M.D., Professor of Surgery, Roger Williams Medical Center, Brown University, 825 Chalkstone Avenue, Providence, RI 02908-4735.

Table 1. SURGICAL MANAGEMENT OF BREAST CANCER IN ELDERLY PATIENTS

Survey Year	Frequency of Mammography According to Age			
	40-49 (years)	50-64 (years)	65+ (years)	All Ages
1987	47% (N = 113/238)	40% (N = 119/299)	34%†* (N = 104/308)	40%†* (N = 336/845)
1989	61% (N = 168/274)	50% (N = 142/284)	45%‡* (N = 129/284)	52% (N = 439/842)
1995	74%(‡) (N = 248/336)	62%(‡) (N = 167/269)	48%(‡)* (N = 118/244)	63%(‡) (N = 533/849)

Based on 1995 comparison by frequency, Rhode Island Department of Health.

* p = significant by age group.

† p = 0.005.

‡ p = 0.001.

of the cancer (cure), maintenance of a maximum level of patient independence, freedom of symptoms, and maintenance of personal dignity and lifestyle.

We have reviewed the management of elderly patients with breast cancer in Rhode Island to determine the effect of age on screening and detection policies, as reflected in the stage at the time of diagnosis and treatment strategies for patients with primary breast cancer with effects on outcome.

MATERIALS AND METHODS

Data were analyzed from 5962 patients with breast cancer recorded in the statewide Tumor Registry of the Hospital Association of Rhode Island (1987-1995) with focus on 9 institutions with established tumor registries using AJCC classified tumor data. Tumor Registry data

were entered on a designated computer and analyzed using SAS statistical analysis procedures (SAS, IBM Computer Software, Cary, NC). Additional data were provided by the Rhode Island Department of Health that included aggregated responses from three statewide surveys of women's cancer screening to determine the percentage of women receiving mammograms according to the guidelines by age during the survey years 1987, 1989, and 1995. A total of 2536 women were contacted by telephone using random-digit dialing. Approximately 850 women 40 years of age and older responded in each survey. Respondents represented approximately 70% of eligible women contacted in each of the three surveys.

Detection rates of stage 0 and stage I disease were compared across age groups using a chi square test. A chi square test also was used to compare rates of use of different treatment methods across age groups. For univariate analyses of survival, the Kaplan-Meier product-limit method was used, and survival rates were compared using a log-rank test. Multivariate analysis was performed using Cox's proportional hazards regression model.

RESULTS

In the Rhode Island survey of women receiving mammograms according to guidelines by age during the period 1987 to 1995, the generalized guidelines included mammograms at least every 2 years for women ages 40 to 49, and yearly mammograms for women ages 50 to 64. Patients 65 years of age or older were limited by Medicare to having screening mammograms every other year. Approximately 850 women responded per survey year. The percentages of women having mammograms during the 1987 survey ranged from 47% for women in the 40- to 49-year-old group (Table 1) to 34% in women older than

Table 2. SURGICAL MANAGEMENT OF BREAST CANCER IN ELDERLY WOMEN

Time Period	Detection of Preinvasive (Stage 0) and Invasive (Stage 1) Breast Cancer According to Age and Time Period			
	Stage 0		Stage 1	
	40-64* (years)	≥65† (years)	40-64* (years)	≥65† (years)
1987-1989	10.2%	6.3%§	34.4%	40.2%
1990-1992	13.5%	10.0%‡	37%	45.7%
1993-1995	14.8%	8.66%	39%	48%

* 284 patients per year.

† 318 patients per year.

‡ p < 0.05.

§ p < 0.01.

|| p < 0.001.

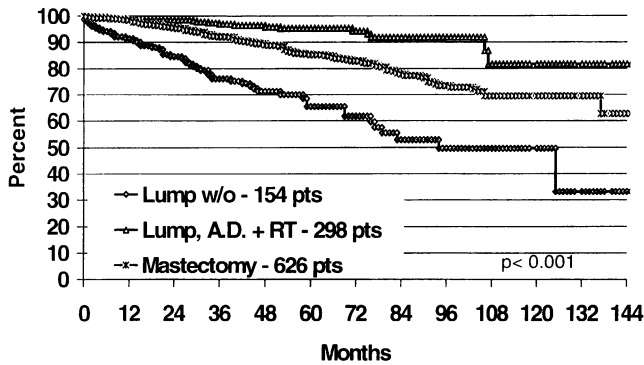


Figure 1. In patients with stage I lesions (T1a and T1b), there was a significant impairment of survival.

65 years of age. The percentages increased to 74% in the 40- to 49-year-old group and 48% in the 65-year-old group in 1995. The increase in percentages of women having mammograms between survey years 1987 and 1995 was 57.5% in the 40- to 49-year-old group, 55% in the 50- to 64-year-old group, and 41.2% in the older than 65 years of age group ($p < 0.001$).

The frequency of diagnosis of preinvasive and early staged cancer detection and stage I disease was evaluated over three time periods: 1987 to 1989, 1990 to 1992, and 1993 to 1995 (Table 2). There was a lower detection rate of preinvasive cancer in patients older than 65 years of age compared to the patients 40 to 64 years of age at each period from 1987 to 1989 ($p = 0.004$), 1990 to 1992 ($p = 0.005$), and 1993 to 1995 ($p < 0.001$). In the period from 1987 to 1989, preinvasive cancer was diagnosed in 6.9% of the women in the older than 65 years of age group *versus* 11.5% of women in the 40 to 64 years of age group. The frequency of detection of preinvasive cancer in the younger patients (40–64 years of age) increased from 11.5% in 1987 to 1989 to 15.1% in 1993 to 1995. In contrast, the frequency of diagnosis of preinvasive cancer in the group women at least 65 years of age showed

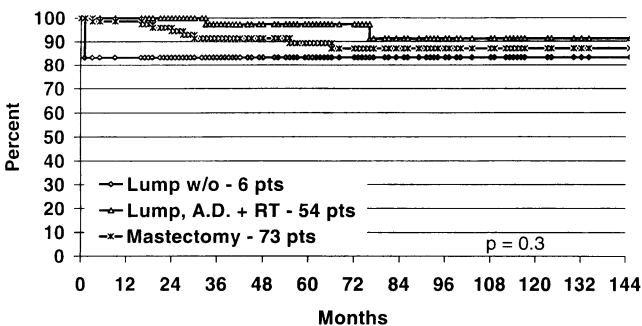


Figure 2. In patients with stage I lesions (T1a and T1b) who are 40 to 50 years of age, there are no survival differences by surgical procedure (lump without group is insufficient for analyses).

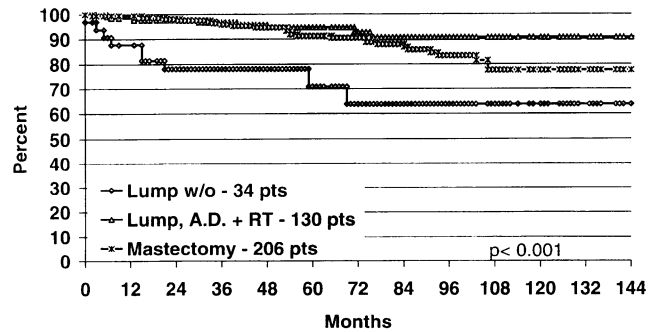


Figure 3. In patients with stage I lesions (T1a and T1b) who are 51 to 64 years of age, there was significant impairment of survival in patients having lumpectomy with axillary dissection or radiation.

only a modest increase from 6.9% to 8.9%. In both groups, there were modest increases in diagnosis of stage I cancers: 37.4% to 41.1% in the group of women younger than 65 years of age and 43.7% to 50% in the group of women 65 years of age and older.

Five-year survival rates (estimated) by primary operative procedure among patients in the three age groups with stages I and T1a and T1b cancer are shown in Figures 1 through 8. Less than 6% of the 40- to 49-year-old patients and 10.8% of the 50- to 64-year-old patients had lumpectomy alone (without axillary dissection, Table 3). This contrasted with 26.6% of the patients in the older than 65 years of age group. Survival was impaired in the patients having lumpectomy in the older than 65 years of age group *versus* those having conventional surgical resection (lumpectomy plus axillary dissection plus radiation therapy or mastectomy), $p = < 0.001$ (Fig. 4).

Figures 1 through 4 illustrate the survival for favorable stage IA and IB patients comparing lumpectomy alone *versus* lumpectomy plus axillary dissection (plus radiation therapy) *versus* mastectomy according to three age groups: 40 to 49, 50 to 65, and older than 65 years of

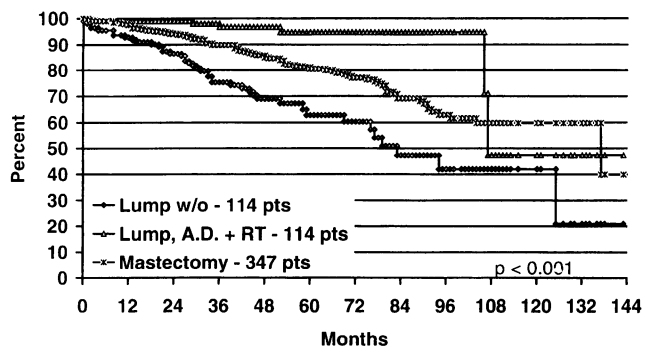


Figure 4. In patients older than 64 years of age with stage I (T1a and T1b), survival was impaired in the patients having lumpectomy only *vs.* lumpectomy and axillary dissection and adjuvant radiation or mastectomy.

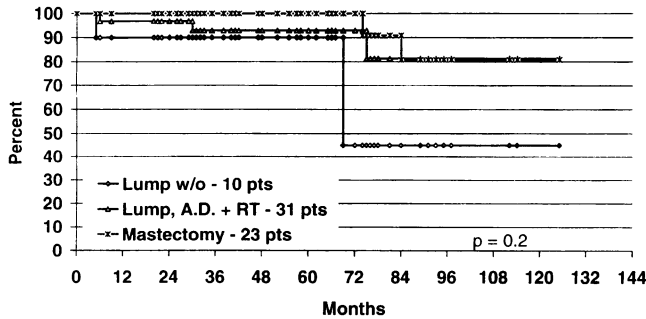


Figure 5. In patients 51 to 64 years of age with stage IA lesions, there was impairment of survival in patients with lumpectomy alone.

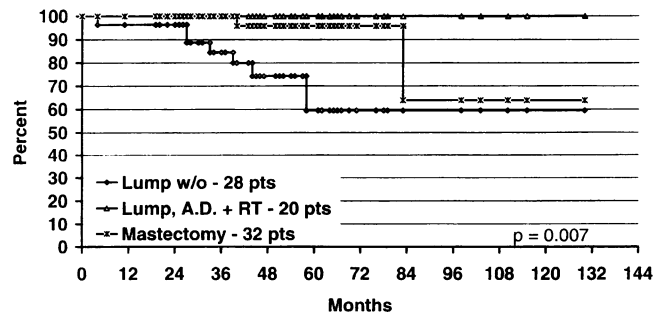


Figure 7. In the patients older than 64 years of age with stage IA breast cancer, survival is impaired significantly in those having lumpectomy and axillary dissection vs. conventional surgery.

age. The worst outcome was seen in the patients who had lumpectomy without axillary dissection in all age groups. Overall, 5-year survival was 65% in stage IA and IB patients who received lumpectomy alone versus 95% survival in stage I patients having lumpectomy (plus radiation therapy) and axillary dissection (Fig. 1). Most of this loss in survival occurred in the older than 65 years of age patients, in whom 25% had lumpectomy alone and had survival of 63% (Figs. 4, 7, and 8).

A multivariate analysis using proportional hazards regression was used to evaluate survival according to stage, age, type of surgery, use of chemotherapy, use of hormone therapy, and the interaction between age, stage, and type of therapy, and the interaction between age, stage, and type of surgery. Results are listed in Table 4. The results indicate that overall, patients who received lumpectomy alone were at higher risk of death (risk ratio = 1.42, $p = 0.05$). Patients at least 65 years of age who received lumpectomy alone and had stage I or stage II disease had impaired survival (risk ratio = 2.73, $p < 0.001$ for stage I and risk ratio = 2.81, $p < 0.001$ for stage II).

Adjuvant hormone therapy was given to 75.2% in patients older than 65 years of age with stage I cancers versus 78.9% in patients 51 to 64 years of age and 81% in patients 40 to 50 years of age. Chemotherapy treatment

was given to 56.4% of stage I patients older than 65 years of age versus 63.5% and 74.8%, respectively, in the 50- to 64-year-old and 40- to 50-year-old age groups (Table 3).

DISCUSSION

This study has focused on breast cancer in elderly patients. Although this disease is considered more favorable biologically in older patients than in younger patients, the outcome for elderly patients appears compromised because of flawed diagnostic and treatment efforts. The Medicare mandate of screening mammography every other year has resulted in a lower intensity of screening mammograms in patients 65 years of age and older. The rate of screening in the older than 65 years of age group was 48% versus 62% in the 50 to 64 years of age group and 74% in the 40 to 50 years of age group, $p < 0.001$. There is an impaired detection of highly favorable and curable preinvasive cancers in the patients older than 65 years old (8.7% vs. 14.8% in the patients younger than 65 years of age), $p = 0.001$. Increased frequency of diagnosis of preinvasive and stage I cancers in the younger than 64 years of age group probably reflects the improve-

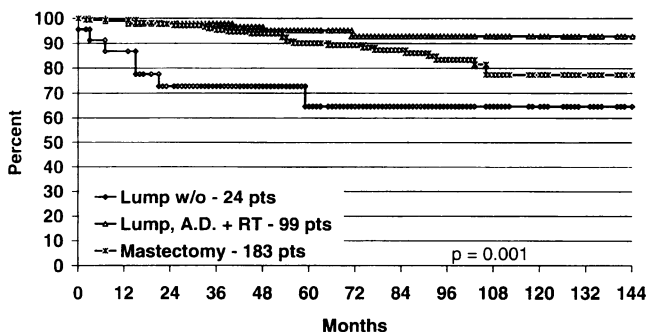


Figure 6. In patients 51 to 64 with stage IB lesions, there was impairment of survival in patients with lumpectomy alone.

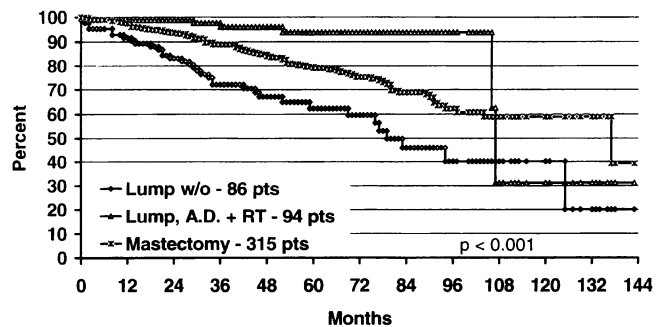


Figure 8. In patients older than 64 years of age with stage IB breast cancer, survival is impaired significantly in those having lumpectomy and axillary dissection vs. conventional surgery.

ments secondary to mammographic screening. The built-in compromises applied to screening and early diagnosis in the older than 65 years of age group would be expected to have a negative survival impact over time and be translated into lessened survival for women older than 65 years old. This might offset the usually more favorable biology expected in the more elderly patients (*vis à vis* patients in the younger than 40 years of age group).⁶

Finally, there are other indications of compromised outcomes in patients older than 65 years of age. The use of lumpectomy alone *versus* lumpectomy plus axillary dissection or mastectomy is associated with a significantly worsened survival in all age groups. This suggests that failure to dissect the axilla in these patients to detect nodal metastases is compromising their care.¹⁸

A study of 4778 patients from the Massachusetts General Hospital showed a steady increase in the positive predictive value of a biopsy generated from mammographic screening guidelines between ages 40 and 79.¹⁹ The effect of age on the positive predictive value of a breast biopsy as performed after mammography showed a continued increase ranging from 12% in women 40 years of age up to 46% in patients at 79 years of age. This included the positive predictive value of the biopsy for all cancers (invasive and *in situ* duct cancers) and showed an increase of 0.08% to 1% per year up to age 79. If only the invasive cancer was included, the positive predictive value ranged from approximately 5% at age 40 and rose steadily to approximately 30% by age 79.¹⁹

The increased use of lumpectomy alone without axillary dissection or radiation therapy to the breast is considered to be an inferior treatment method as compared to the more standard therapy. Based on the National Surgical Adjuvant Breast and Bowel Project data, lumpectomy alone was associated with local recurrence rate of 27% compared to only 6% when radiation was added to the treatment regimen.²⁰ With longer follow-up, these numbers increased to 39% in the lumpectomy alone *versus* approximately 10% in those treated with lumpectomy plus radiation. Mastectomy without axillary dissection in stage I to stage IV disease is associated with clinical axillary recurrence rate of 15% to 25% compared to <3% recurrence after axillary dissection.^{21,22} The use of limited breast excision plus tamoxifen as an alternative to definitive treatment has been done, but achieves only a 60% to 70% response rate regarding tumor reduction for a limited period followed by clinical progression of the cancer.²³⁻²⁵ Adequate care of the elderly patient often requires additional effort on the part of the physician to explain treatment and management to these patients and also to inform their family properly of the various options available. Frequently, decisions regarding treatment are made without the full involvement of the elderly patient. Thus, not only are elderly patients screened inadequately,

Table 3. SURGICAL MANAGEMENT OF BREAST CANCER

	Stage 0			Stage 1			Stage 2			Stage 3			Stage 4				
	40-64 yrs	65+ yrs	5-year survival percent (N)	40-64 yrs	65+ yrs	5-year survival percent (N)	40-64 yrs	65+ yrs	5-year survival percent (N)	40-64 yrs	65+ yrs	5-year survival percent (N)	40-64 yrs	65+ yrs	5-year survival percent (N)		
Lumpectomy w/o	95 (194)	54%	76 (141) 51%	79 (110)	9%	66 (391) 25%	73 (30)	3%	41 (108) 25%	60 (5)	2%	35 (29)	11%	11 (24)	33%	9 (45)	33%
Lumpectomy	100 (26)		85 (14)	96 (497)		92 (370)	84 (293)		78 (149)	56 (14)		61 (9)		74 (10)		24 (10)	
Mastectomy	97 (136)		81 (122)	90 (555)		78 (786)	75 (772)		67 (879)	46 (205)		49 (236)		16 (39)		20 (80)	
P-value			.378	<.001		<.001	.020		<.001	.703		.111		.027		.222	

Data from the Hospital Association of Rhode Island.

Table 4. ADJUVANT THERAPY FOR PRIMARY OPERABLE BREAST CANCER

Age	40–50 years		51–64 years		>65 years	
Stage 0						
Hormone Rx	98/139	71%	148/234	63%	183/283	65%
Chemo Rx	96/139	71%	139/234	59%	163/283	58%
Stage I						
Hormone Rx	284/378	75%	588/805	73%	1084/1563	69%
Chemo Rx	258/378	68%	477/805	59%	827/1563	53%
Stage II						
Hormone Rx	416/477	87%	525/641	82%	829/1150	72%
Chemo Rx	401/477	84%	419/641	65%	488/1150	39%
Stage III						
Hormone Rx	84/90	93%	141/156	90%	233/306	76%
Chemo Rx	83/90	92%	120/156	77%	132/306	43%
Stage IV						
Hormone Rx	42/42	100%	107/120	89%	200/223	90%
Chemo Rx	41/42	90%	92/120	77%	128/223	57%

Data from the Hospital Association of Rhode Island 1995.

but they have compromised workups and less than ideal treatment because of their age, even though their relative survival stage by stage and therapy by therapy essentially should be equivalent fully to that of younger patients.

There is a great need to enroll elderly patients with breast cancer into breast cancer trials that evaluate not only the adequacy of surgery, but also that of hormonal and even chemotherapeutic treatment for high-risk patients. The tendency to “write off” these patients should be resisted and counterbalanced by effective study protocols, which truly offer the patient optimum therapy consistent with their stage in life and with proper consideration of comorbid factors to ensure tolerance of therapy. In conclusion, breast cancer management is compromised in elderly patients who are older than 65 years of age.

Screening and Detection of Favorable Cancer

Frequency of screening is significantly less in elderly patients older than 65 years of age *versus* younger patients. In contrast to a progressive increase in screening younger patients, there was a plateau in the use of screening mammography in elderly patients (*i.e.*, 75% in the patients younger than 50 years of age *versus* 48% in the patients older than 65 years of age in 1995, $p < 0.001$). Detection of highly favorable *in situ* cancer remained at a plateau 6.3% to 8.7% in women older than 65 years of age during three periods (1987–1995) *versus* a progressive increase in detection (10.2%–14.8%) in women younger than 65 years of age.

Primary Surgical Treatment is Compromised in the Elderly

Lumpectomy alone was done in 25% of elderly patients with stage I cancer (older than 65 years of age) *versus* 9.5% in younger patients. Survival was decreased in these patients; 66% *versus* 78% and 92% survival, respectively, after modified radical mastectomy or after conventional lumpectomy with axillary dissection and radiation.

Lumpectomy alone was done in 9.5% of stage II and 10.6% of stage III in patients older than 65 years of age *versus* 2.7% and 2.2%, respectively, in patients younger than 65 years of age. Survival was impaired by 19% to 32% in elderly patients with stage II and stage III cancer who were treated by lumpectomy only *versus* conventional lumpectomy plus axillary dissection or mastectomy.

Critique

Breast cancer management is impaired in elderly patients (older than 65 years of age). This is multifactorial involving physician, public, and government attitudes toward cancer care in the elderly and government-mandated restrictions for screening. Restructuring of screening programs is necessary to provide adequate screening of elderly patients. Clinical trials are needed to evaluate treatment methods of primary surgery and adjuvant therapy in the elderly.

References

1. Fleming ID, Fleming MD. Breast cancer in elderly women. *Cancer* 1994; 74(Suppl):2160–2164.

2. Jancik R, Ries LG, Yates JW. Breast cancer in aging women: a population-based study of contrast in stage, surgery, and survival. *Cancer* 1989; 63:976-981.
3. Holmes FF. Clinical evidence for a change in tumor aggression with age. *Semin Oncol* 1989; 16:34-40
4. Herbsman H, Feldman J, Seldera J, et al. Survival following breast surgery in the elderly. *Cancer* 1981; 47:2358-2363.
5. Clark GM. Biology of breast cancer in older women. *J Gerontol* 1992; 47:19-23.
6. Chung M, Chang HR, Bland KI, Wanebo HJ. Younger women with breast carcinoma have a poorer prognosis than older women. *Cancer* 1996; 77:97-103.
7. Norm JW, Asire JJ, Young JL, Pollock ES. SEER program; cancer incidence and mortality in the U.S. 1973-1981. Bethesda (MD): National Institutes of Health, Department of Health and Human Services; 1985. NIH Publication No.:85-1837.
8. Tabor L, Fagenberg G, Duffy SD, Borherne L. New Swedish breast cancer detection results for women age 40-49. *Cancer* 1993; 72(4 Suppl):1437-1448.
9. Tabor L, Fagenberg G, Duffy SD, Day NE. Central Hospital, Falon Sweden. *J Epidemiol Community Health* 1989; 43:107-114.
10. Begg CR, Aelen M, Carbone P, et al. Cooperative groups and community hospitals. *Cancer* 1983; 52:1766-1767.
11. Vana J, Ramsey B, Metlin C, Murphy G. Trends in diagnosis and management of breast cancer in the U.S. (from the Survey of the American College of Surgeons). *Cancer* 1981; 48:1043-1052.
12. Horton JA, Roman MC, Creuss DF. Mammography attitudes and usage study. *Women Health Issues* 1992; 2:180-188.
13. August DA, Rea T, Sondak VK. Age-related differences in breast cancer treatment. *Ann Surg Oncol* 1994; 1:15-52.
14. Kessler HJ, Seton JZ. The treatment of operable breast cancer in the elderly female. *Am J Surg* 1978; 135:664-666.
15. Moss HB. Role of chemotherapy and adjuvant therapy in the management of breast cancer in older women. *Cancer* 1994; 74:2165-2171.
16. Hunt KE, Fry DE, Bland KI. Breast carcinoma in the elderly patient. *Am J Surg* 1990; 140:339-342.
17. Koppans DB. Positive predictive value of breast biopsy performed as a result of mammography: there is no abrupt change at age 50 years. *Radiology* 1996; 200:357-360.
18. White RP, Vezeridis MP, Konstandoulakis MM, et al. Therapeutic options and results for management of minimally invasive breast cancer: influence of axillary dissection for therapy of T1a and T1b lesions. *J Am Coll Surg* 1996; 183:572-582.
19. Goldman L. Cardiac risks and complications of noncardiac surgery. *Ann Surg* 1983; 198:780-791.
20. Fisher B, Redmond C, Fisher E, et al. Ten-year results of randomized clinical trial comparing radical mastectomy and total mastectomy. *N Engl J Med* 1985; 312:674-681.
21. Haffty BG, McKhann C, Beinfeld M, et al. Breast conservation surgery without axillary dissection. *Arch Surg* 1993; 128:1315-1319.
22. Fisher B, Bauer M, Margolese R, et al. Five-year results of a randomized clinical trial comparing total mastectomy and segmental resection with and without radiation treatment of breast cancer. *N Engl J Med* 1985; 312:665-673.
23. Bradbeer JW, Kyngdon J. Primary treatment of breast cancer in elderly women with tamoxifen. *Clin Oncol* 1983; 9:31-34.
24. Halleberg A, Lundgren B, Norin T, Sanders S. Treatment of early localized breast cancer in elderly patients by tamoxifen. *Br J Radiol* 1982; 55:511-515.
25. Dunser M, Haussler B, Fuchs H, Martgreiter R. Lumpectomy plus tamoxifen for the treatment of breast cancer in the elderly. *Eur J Surg Oncol* 1993; 19:529-531.

Discussion

DR. WILLIAM C. WOOD (Atlanta, Georgia): I congratulate the authors for this study in a population that accounts for half of breast cancers today and will soon account for more.

With Richard Swanson, I reported on the surgical management of breast cancer for women in their ninth and tenth decades of life from the Massachusetts General Hospital. Those patients who received standard therapy, either with modified radical mastectomy or breast conservation therapy, did very well. But those women who had lesser attempts to control their disease, in the hope of doing less for them because they were elderly, actually had a significant likelihood of experiencing a local regional failure, becoming more frail and elderly, and having more problems taking care of themselves.

Dr. Wanebo's report goes beyond ours, looking at the diminished screening in older women and the use of adjuvant therapy. He has demonstrated inferior rates of detection of preinvasive cancer in these older women with less aggressive screening.

Do you think the diminished survival with limited therapy that you showed in women older than 65 represents the results of that lesser therapy, or of patient selection of frail elderly patients who are likely to die of comorbid diseases for such limited therapy?

I betray my own bias by the question.

Data from the early breast cancer trialists' group overviews show no benefit from adjuvant chemotherapy in women older than 65. Will you comment on the significant use of that in elderly women in your manuscript and also the adjuvant chemotherapy for Stage 0 disease patients, 58% to 71% of the *in situ* patients receiving adjuvant systemic therapy?

Your data would suggest that we are seeing both underdetection and overtreatment of these elderly women.

Thank you for allowing me to review this manuscript and for calling attention to the plight of older women in our country.

DR. EDWARD M. COPELAND (Gainesville, Florida): In my own practice, I compromise breast cancer treatment only in the physiologically infirm or the extremely elderly patient. Chronological age has no influence on treatment. Why is breast cancer treatment in Rhode Island so different?

The data certainly speak for the same diagnostic criteria and treatment schemes for patients, almost regardless of age. Possibly the cutoff point for data evaluation should have been at 75 or 80 years of age. Sixty-five years of age does not seem particularly old to me anymore.

Did the authors stratify their data by age older than 65 years? Other organizations such as the American College of Surgeons or other state registries might be wise to evaluate the same data. Certainly, limiting mammograms to biennial examinations for Medicare patients, from the data presented, would appear to be inappropriate.

Dr. Wanebo, you, Dr. Bland, and your colleagues have recently reported the incidence of lymph node metastasis in patients with T1a and T1b lesions. As I recall, you reported 17% to 20% incidence. Interest has been rekindled recently in the therapeutic value of axillary lymph node dissection. Do you think the decrease in survival in those patients without lymph