

2035 - Association of Women's Local Treatment Decisions with Local Recurrence Risk and Life Expectancy

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Background

Several treatment options are available for women diagnosed with early stage breast cancer (BC). These include mastectomy (M), conservative surgery (CS) and whole breast radiation therapy (WRT), CS and accelerated partial breast irradiation (APBI), or randomization in the RTOG 0413 trial. Depending on the age at diagnosis and receptor status, oral adjuvant systemic treatments, such as tamoxifen (T), with or without local breast irradiation may be offered.

Although CS yields low rates of local recurrence with good to excellent cosmetic results, it is underutilized in the treatment of breast cancer. APBI significantly shortens the standard radiation course from 6-7 weeks to 1 week. Currently, clinical trials have suggested the efficacy of APBI to be safe, reproducible and reduce the time, inconvenience and toxicity associated with traditional whole breast radiation therapy. However, the possibility of an increase in the risk of a local recurrence associated with APBI may or may not be an acceptable tradeoff to women.

Purpose

The purpose of this study was to evaluate how the effects of age (A), race/ethnicity (R/E), education (E), income (I), risks of local recurrence (LR), and life expectancy influence a woman's local treatment preferences.

Methods

•Between 6/05 and 9/05, 161 women (106 without BC & 55 with BC) participated in an IRB-approved survey. Participants were between ages of 25 and 65. At the time of the survey BC participants had already completed or were undergoing their treatments.

•Preferences and time trade off decisions were assessed through the use of clinical vignettes describing health states. The vignettes included information about age at diagnosis (50 versus 70), local treatment choices (M, CS +/- (WRT versus APBI) +/- T, participation in RTOG 0413 trial) and risks of LR.

•For each vignette, participants selected between different treatments given information about LR and side effects. Women rated treatment options, using a time trade-off method given different local treatments and LR risks. (See below).

1. Imagine that you have been diagnosed with a small breast cancer, and that your doctor tells you about two recommended local treatments:

- Total mastectomy** (surgical removal of the entire breast in which the cancer was found. Your doctor says that of every 100 women who chose total mastectomy, 2 will develop a recurrence to cancer in the breast in 10 years. If you develop a local recurrence after a total mastectomy, you will require a 6-7 week course of radiation therapy.
- Partial mastectomy** (surgical removal of the part of the breast in which the cancer was found), plus radiation therapy 15-30 minutes per day, 5 days per week for 6-7 weeks. Your doctor says that of every 100 women who choose partial mastectomy plus radiation therapy, 10 will develop a recurrence of cancer in that breast in 10 years. If you develop a local recurrence after a partial mastectomy followed by radiation therapy, you will require a total mastectomy.

Given the above information would you choose:

- Total mastectomy
- Partial mastectomy

Suppose you are told that women like you can normally expect to live to age 80 years. Your life expectancy is 80 minus your current age.

If having a partial mastectomy instead of a total mastectomy were likely to shorten your life expectancy, how many years of your life expectancy (80 minus your current age) would you be willing to give up by having a partial instead of a total mastectomy?
 ____ Years

2. Imagine that your doctor tells you that if you choose partial mastectomy, you may also choose between two methods of radiation therapy. You may choose:

- 15-30 minutes per day, 5 days per week, for 6-7 weeks. Of every 100 women who have this treatment, 1 will have a recurrence of cancer in that breast in the next 3 years.
- 15-30 minutes every morning and evening for 5 days. Of every 100 women who have this treatment, 4 will have a recurrence of cancer in that breast in the next 3 years.

•Data were collected in a number coded anonymous database. The database was statistically analyzed by total respondents (n=161) and by stratified analysis of BC participants (n=55) versus Controls (n=106). Further statistical analysis was performed to evaluate the associations of age (A), race/ethnicity (R/E), educational attainment (E), household income (I) and risk for local recurrence (LR) on local treatment choices.

•The sample size needed per group to detect a 10 point difference in each subscale over time within one group was 35 individuals (alpha =.05, two-tailed paired t-test, and power=80% assuming a temporal correlation of 0.6 between scores).

Given the above information would you choose:

- Total mastectomy
- Partial mastectomy with 6-7 weeks of radiation
- Partial mastectomy with 1 week of twice daily radiation

If choosing 1 week instead of 6-7 weeks of radiation therapy were likely to shorten your life expectancy, how many years of your life expectancy (80 minus your current age) would you be willing to give up to by having 1 week instead of 6-7 weeks of radiation therapy?
 ____ Years

3. Imagine that you are 50 years old and have been diagnosed with a small breast cancer. After having a partial mastectomy, you are offered three treatment choices.

- Take one pill daily for 5 years. Of 100 women who take the pill, 11 will develop a recurrence of cancer in the breast within 5 years.
- 6-7 weeks of daily radiation therapy. Of 100 women who have 6-7 weeks of radiation therapy, 4 will develop a recurrence of cancer in the breast within 5 years.
- Both the pill and radiation therapy. Of 100 women who receive both treatments, 1 will develop a recurrence of cancer in the breast within 5 years.

Given the above information would you choose:

- Taking the pill daily for 5 years
- Radiation therapy for 6-7 weeks
- Both the pill and radiation therapy

Suppose you are told that women who take the pill do not live as long, on average, as women who do not take it. 2 women out of a 1000 who take the pill may develop blood clots or endometrial cancer. Women on the pill have an increased risk of hot flashes and night sweats. Given this information would you choose:

- Taking the pill daily for 5 years
- Radiation therapy for 6-7 weeks
- Both the pill and radiation therapy

If taking the pill without radiation therapy were likely to shorten your life expectancy, how many years of life expectancy would you be willing to give up by not having radiation therapy?
 ____ Years

Results

Table 1. Distribution of Respondents by Age, Race/Ethnicity, Education, Household Income

Age	N (%)	R/E	N (%)	E	N (%)	I	N (%)
25-34	43 (27)	Asian	11 (7)	High School (HS) or below	22 (14)	Below \$30,000	24 (25)
35-45	40 (25)	Black	21 (13)	Above HS, some college	38 (23)	\$30-\$75,000	65 (40)
46-55	41 (25)	Hispanic	47 (29)	Bachelor's (BA)	50 (31)	Above \$75,000	59 (37)
56-65	37 (23)	White	75 (47)	Master's (MA) or higher	51 (32)	Unknown	13 (8)
		Other	7 (4)				

Figure 1. Treatment Preferences by Age of All Participants

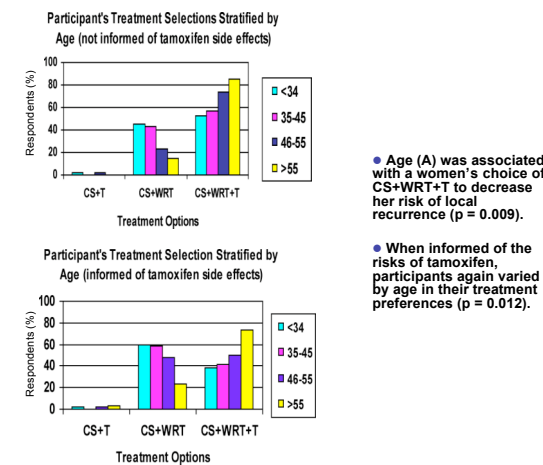
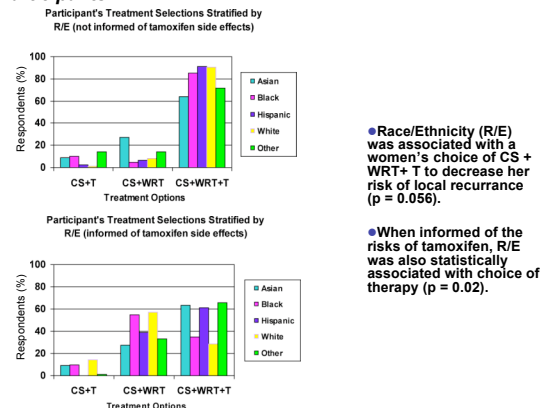


Figure 2. Treatment Preferences by Race/Ethnicity of All Participants



Conclusion

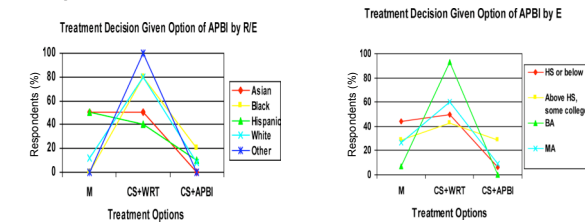
In our study, local recurrence risk influenced women's treatment decisions. When offered different treatment choices, women chose to receive local therapies that offered the lowest risk of local recurrence.

Most women chose to receive conservative surgery and whole breast irradiation with tamoxifen for 5 years, when informed of the lower local recurrence rates. Less women selected to receive tamoxifen after being informed of potential side effects, such as hot flashes, blood clots, and endometrial cancer. Age and race/ethnicity influenced women's decision to take tamoxifen.

Breast cancer patients responded more conservatively to the time trade off questions. These patients were less likely to give up life to receive less aggressive local treatments when compared to non-breast cancer participants.

Most women chose whole breast irradiation over partial breast irradiation given the potential higher local recurrence risk associated with partial breast irradiation. The choice to participate in the NSABP B-39/RTOG 0413 trial was influenced by education and household income. Considering that minority women and those of lower socioeconomic status diagnosed with breast cancer were more willing to receive partial breast irradiation, more effort should be made to enroll these patients in national clinical trials, such as the NSABP B-39/RTOG 0413.

Figure 3. BC Patient's Treatment Selection Given the Option of APBI



•When asked to choose between M, CS+WRT or CS+ APBI given related risks of local recurrence, breast cancer patients most often chose CS+WRT (64%). Only 9% of breast cancer patients chose CS+APBI.
 •R/E and E influenced this choice (p = 0.04 and p = 0.05); black and hispanic women as well as women with less education were more willing to undergo APBI.

BC Participants' Treatment Preferences by Education

•Stratified analysis showed an association between CS+WRT+T and Education (p<0.006) in women diagnosed with breast cancer; women with above a high school education all choosing to receive aggressive treatment.

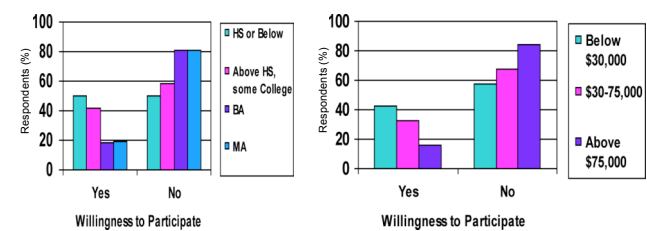
Figure 4. Time Trade-Off

•Women with breast cancer were less likely than controls to trade time to receive CS+WRT instead of M.

Predictive Factors	Odds Ratio (OR)	95% Confidence Interval (CI)
Age	0.21	0.08, 0.56
Race	0.22	0.09, 0.52
Education	0.27	0.11, 0.65
Income	0.37	0.15, 0.92

•Women with breast cancer were less likely to give up years of life to receive CS+APBI instead of CS+WRT. Race influenced the time trade off decision of BC patients (OR=0.37; 95% CI=0.16, 0.87)

Figure 5. Willingness to Participate in RTOG 0413 Randomized Trial



•28.5% of all women surveyed answered they would be willing to participate in the RTOG 0413 trial; less education and lower income were associated with the decision to participate (p = 0.009 and p = 0.03).