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FOREWORD

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Beth A Jones 7/16/98
PI - Signature Date

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INTRODUCTION

This is a follow-up study of a cohort of African-American and Caucasian women who were diagnosed with breast cancer in the late 1980's. Its purpose is to examine race differences (black/white) in breast cancer survival. In addition to measuring survival and examining racial differences in survival, this study also seeks to identify prognostic factors related to survival for the study population and to determine if the prognostic indicators are the same for women of both races.

PROGRESS WITH REGARD TO STATEMENT OF WORK

Task 1: A new project coordinator, Ms. Phyllis Gwatkin, was hired in January 1998 to replace Dr. Meredith Glazer.

Task 2: Approvals from the Institutional Review Boards have been obtained.

Task 3: The data tracking system is in place and, as new data is collected, it is added to the existing data on the newly purchased Dell Computer. It should be noted that several months were needed to train Ms. Gwatkin to familiarize her with the data tracking system.

Task 4: A review of all existing files on patients was completed and a comprehensive list of all tumor specimens and their locations has been developed and added to the database.

Task 5: The Rapid Case Ascertainment (RCA) is still in the process of collecting the tumor specimens from the hospitals. This has taken longer than planned for several reasons: (1) hospitals have merged and (2) hospitals lack the staff and/or time to retrieve the archived materials resulting in a greater effort from the RCA staff. To date slides and/or blocks have been received from seventeen hospitals, two hospitals are outstanding, and one hospital has discarded both its slides and blocks.

Task 6: The study cases were linked in January 1997 to the Connecticut Tumor Registry (CTR) files. A second request for vital status is anticipated at the beginning of 1998. In order to maximize the number of outcome events, we are delaying this final update until all other data collection has been completed.

Tasks 7 and 8: This work is still in progress. The pathologist looks at the slides as they are received from the RCA. The Critical Technology Lab (CTL) has developed protocols (appendix I) for preliminary staining which will produce accurate results. A delay in performing these laboratory tests is attributed to: (1) a delay in receiving blocks from the community hospitals, (2) changes in staffing of the CTL (new technicians have now been hired and trained), and (3) a test period for the new protocols before testing on actual tissue samples begins. Now that these problems are resolved, the director of the CTL (Dr. Christine Howe) estimates that lab testing will be completed in October 1998.

Task 9: All original documentation (e.g., progress notes, M.D. consults, discharge summaries) and patient interviews for available data on treatment for cancer are in the process of being reviewed. The final **patient data collection instrument** (appendix II, previously termed the

physician questionnaire) was mailed to physicians, either Primary Care Physicians (PCP) or specialists, in October 1997. The resulting information has been added to the database. A second mailing was distributed in May 1998 to physicians and hospital tumor registries which were referred by the PCP. Telephone contact for those physicians who did not respond to the initial mailing is underway. In some cases, it is necessary for the project coordinator to abstract the patient information from the files of private medical offices.

Task 10: This task has been coordinated with **task 8**, in that information to ascertain vital status (including recurrence or development of subsequent primary cancer) was collected from physicians.

Task 11: Data Management. Even though the data will be “trickling” in through the end of the study period, the development of SAS datasets is underway. This involves the assimilation of several different data sources with existing data to develop SAS datasets, as well as creation of variables, and various indices (especially relevant to the psychosocial variables). The basic data management tasks were necessary to perform the preliminary data analysis described below.

Task 12: Data Analysis. Preliminary data analysis based on interview variables, medical record abstraction, and a first look at vital status information from the CTR was performed in the fall of 1997.

Task 13: Preliminary findings were presented at the DOD *ERA of Hope* meeting, November 1997 in Washington, D.C.

GOALS FOR THE UPCOMING YEAR

It is estimated that the actual laboratory testing will be completed in October 1998. The logistics of performing these tests are somewhat complicated and have involved/will involve the following: retrieving archived tissue blocks from community hospitals, selecting the appropriate blocks for testing via a slide review, sending blocks for testing, and then forwarding test slides to the study pathologist (another location), retrieving slides/blocks from the pathologist and Yale laboratory, and eventually returning materials to the original hospitals. Thus, we expect to have results by November 1998, but anticipate a fair amount of staff time will go into the coordination of this effort and tracking of test results.

In January 1999, we will request another (and our final) vital status update from the Connecticut Tumor Registry. This will guarantee almost a ten-year follow-up of all study participants. Data management tasks and data analysis should be resumed (preliminary analyses/results were reported at the DOD *Era of Hope* meeting, November 1997), once the final outcome has been determined for the original cohort. On an ongoing basis, we continue to follow-up on our data collection from care providers. At this point, each situation is different (e.g., some physicians are now deceased and we are following up with younger doctors who took over the practices) and requires individualized data collection strategies.

One new addition to the original study objectives is that we are seeking a Yale HIC amendment to allow us to test a subset of specimens for c-met, a promising new prognostic indicator (“Expression of c-met is a Strong Independent Prognostic Factor in Breast Carcinoma”,

Ghoussoub et al., *Cancer* 1998;82:1513-20). The actual cost of the testing is minimal and can be covered without additional funds. To our knowledge, we will be the first to compare the expression of this indicator between race groups. This seems to be a feasible and promising addition to our study objectives.

PERSONNEL/BUDGETARY ISSUES

As outlined in last year's report, we needed to replace one of the original investigators (Dr. Dubrow) with Dr. Susan Mayne. At the time of the request, I was unaware that Dr. Mayne was taking a sabbatical during the academic year. Thus, she has just now joined the project (July 1998). Another important staff change occurred in January of 1998. The original project coordinator, Dr. Meredith Glazer resigned her position and was replaced by Ms. Phyllis Gwatkin. While Ms. Gwatkin has brought many unique coordinating skills to the project, she did not have the same training as her predecessor. Furthermore, it was necessary that Ms. Gwatkin undergo several months of training in order to assume the new responsibilities. Given these two changes in project staff, the PI increased her percent effort somewhat on the project to insure that the study activities could proceed as scheduled. Although the project coordinating position was expanded from the original half-time position, we are carrying forward funds that were not spent on Dr. Mayne's salary last year (due to her sabbatical) and also funds that were not spent on laboratory testing (these will be spent in the next few months). Our intention is to use any unspent monies on the c-met testing outlined above and on a part-time data analyst who will assist Dr. Jones with the final analysis. We feel that this represents the best strategy for producing results and publishable manuscripts in a timely fashion.

PRELIMINARY RESULTS

Preliminary results indicate that as of January 1997, 113 of the 322 women with breast cancer (35.1%) had died, with an average time to death of 4.2 years. Eighty-two (72%) of the deaths were confirmed breast cancer deaths. Among survivors, women were followed for a maximum of 9.6 years, with an average follow-up of 7.2 years. Black women were significantly more likely to die than were white women during the follow-up period (age-adjusted Risk Ratio [RR] = 1.70, Confidence Interval [CI] 1.16 - 2.50). After adjustment for stage at diagnosis (*in situ*/local vs. regional/remote), black women were still significantly more likely to die from their disease than were their white counterparts (RR = 1.52, CI 1.03 - 2.24). Further adjustment of the model for a measure of socioeconomic status (years of education) did not alter these results.

Several tumor characteristics were also found to differ by race group, with black women more likely to be in the higher risk category. Using data abstracted from the medical chart, and adjusting for age, black women were more likely to have high grade tumors (Odds Ratio [OR] = 2.53, CI 1.08-5.91), lymphatic invasion (OR = 1.91, CI 0.99-3.69), necrosis (OR = 1.48, CI 0.87-2.53), skin involvement (OR = 1.88, CI 0.66-5.36), nipple involvement (OR = 1.95, CI 0.77-4.99), estrogen receptor (ER) negative tumors (OR = 1.29, CI 0.70-2.39), and progesterone receptor (PR) negative tumors (OR = 1.50, CI 0.81-2.78). While several of these factors do not

differ significantly between race groups, they suggest a trend toward more aggressive tumors in black women. The extended abstract appears in its entirety in Appendix III.

CONCLUSION

At the end of year two of this four-year project, our preliminary results indicate a survival disadvantage for black women compared with white women with breast cancer, before and after adjustment for stage at diagnosis. Early findings suggest that the survival differential is not explained by race differences in socioeconomic status as measured with years of education. Over the course of the study, these findings will be expanded using more complete data on vital status, cause of death, and time to recurrence. Additionally, we will evaluate the prognostic significance of a wide range of factors including medical care and psychosocial variables, other tumor characteristics, and molecular alterations, thus permitting a multidisciplinary approach to understanding the black/white survival difference in breast cancer.

APPENDICES

APPENDIX I: CRITICAL TECHNOLOGY LABORATORY PROTOCOLS

APPENDIX II: PATIENT DATA COLLECTION INSTRUMENT

APPENDIX III: EXTENDED ABSTRACT

APPENDIX IV: OTHER SUPPORT

Included on separate pages.

PROTOCOL FOR STAINING- NEU
CRITICAL TECHNOLOGIES- T. DAVISON

1. DEPARAFFINIZE IN -
 - * 4X- (5 MIN. EACH) XYLENE
 - * 3X-(3 MIN. EACH) 100% ETHANOL
 - * 1X-(2 MIN.) 50% ETHANOL
2. PLACE UNDER RUNNING DISTILLED WATER FOR 5 MIN.
3. PBS - 5 MIN.
4. QUENCH IN 1.5% HYDROGEN PEROXIDE IN PBS- 15 MIN.
5. RINSE 2X- PBS
6. REMOVE EXCESS PBS FROM SLIDES WITHOUT DRYING THE TISSUE AND MARK WITH A PAP PEN AS FOLLOWS:
 - * DRAW A CIRCLE AROUND THE TISSUE SPECIMEN- 2X
 - * ALLOW THE PAP PEN TO DRY ON THE SLIDE (APPROX. 30 SEC.)
7. ADD 10 % RABBIT SERUM AND INCUBATE FOR- 20 MIN.
8. ASPIRATE SERUM AND ADD THE PRIMARY ANTIBODY AND NORMAL MOUSE IgG. INCUBATE OVERNITE AT 4 DEGREES CELCIUS.
NOTE: THE PRIMARY ANTIBODY AND NORMAL MOUSE IgG NEED TO BE PREPARED AND ALLOWED TO ROTATE AT LEAST 2 HRS. PRIOR TO THIS STEP. PLEASE REFER TO - SOL'N PREP. FOR NEU IN THIS PROTOCOL.
9. PREPARE THE BRIDING ANTIBODY AND PAP REAGENT SO THEY CAN ROTATE OVERNITE AT 4 DEGREES CELCIUS. AGAIN, REFER TO SOL'N PREP. FOR THIS INFORMATION.

DAY 2

10. REMOVE SLIDES FROM HUMIDITY CHAMBER AND RINSE 3X-5MIN.IN PBS
SPIN DOWN THE BRIDING (SECONDARY) ANTIBODY.
11. WIPE EXCESS PBS FROM SLIDES AND ADD THE SECONDARY ANTI-BODY TO EACH SLIDE. INCUBATE IN HUMIDITY CHAMBER AT ROOM TEMPERATURE FOR 30 MIN.
*SPIN DOWN THE MOUSE PAP REAGENT DURING THIS TIME.
12. RINSE IN PBS 3X- 5 MIN. REMOVE EXCESS PBS AND ADD THE PAP COMPLEX TO EACH SLIDE AND INCUBATE 30 MIN. (SAME AS STEP 11)
13. RINSE 3X- 5 MIN. IN PBS AND 1X- 3 MIN. IN TRITON-PBS.
14. INCUBATE IN DAB BATH FOR 3-4 MIN.

PROTOCOL FOR PRESSURE COOKING PRE- TREATMENT
CRITICAL TECHNOLOGIES- T. DAVISON

1. CUT AND MOUNT SECTIONS ON SLIDES COATED WITH SILANE AND HEAT OVERNITE AT 60 DEGREES CELCIUS.
2. SLIDES ARE DEPARAFFINIZED IN:
 - * 4X(5 MIN. EACH) XYLENE
 - * 3X(3 MIN. EACH) 100% ETHANOL
3. METHANOL/ HYDROGEN PEROXIDE - 30 MIN.
(QUENCH ENDOGENOUS PEROXIDASE)- SEE RESEARCH HISTOLOGY SOL'NS.
FOR PREPARATION
4. PLACE SLIDES INTO 100% ETHANOL AND THEN UNDER RUNNING TAP WATER FOR 5 MIN.
5. BRING 2000 ML. OF 0.01M CITRATE BUFFER(pH 6.0) TO A BOIL IN THE PRESSURE COOKER. COVER BUT **DO NOT LOCK THE LID.**
6. POSITION SLIDES INTO METAL STAINING RACKS AND LOWER INTO THE PRESSURE COOKER WHEN THE BUFFER IS AT A **VIGOROUS BOIL**. LOCK THE LID . AIR VENT/ COVER LOCK AND OVERPRESSURE PLUG WILL RISE.
7. WHEN THE PRESSURE REGULATOR BEGINS TO ROCK GENTLY(APPROX. 5 MIN. AFTER LID IS LOCKED), REMOVE THE COOKER FROM THE HEAT SOURCE AND RUN UNDER COLD WATER WITH THE LID ON. **DO NOT OPEN UNTIL THE AIR VENT/ COVER LOCK DROPS.**
8. WASH SECTIONS IN DISTILLED WATER 2X- 1 MIN.
9. PLACE IN PBS AND CONTINUE WITH STEP #4 - IMMUNOSTAINING PROTOCOL FOR PARAFFIN SECTIONS.

0.01M SODIUM CITRATE BUFFER

ADD 3.84 GRAMS OF CITRIC ACID TO 2000 ML. OF DD H2O. ADJUST TO pH 6.0 USING 10N NaOH.

REFERENCES-

1. NORTON A, JORDAN S, YEOMANS P. BRIEF, HIGH TEMPERATURE HEAT DENATURATION(PRESSURE COOKING): A SIMPLE AND EFFECTIVE METHOD OF ANTIGEN RETRIEVAL FOR ROUTINELY PROCESSED TISSUES. J PATHOL 1994; 173: 371-379
2. VECTOR LABORATORIES PROTOCOL, HIGH TEMPERATURE ANTIGEN UN-MASKING TECHNIQUE FOR IMMUNOHISTOCHEMICAL DEMONSTRATION USING PARAFFIN SECTIONS.

15. CHECK POSITIVE CONTROL SLIDE FOR APPROPRIATE STAINING REACTION.
16. RINSE IN DISTILLED WATER FOR 5 MIN. COUNTERSTAIN LIGHTLY IN HEMATOXYLIN.
17. DEHYDRATE, CLEAR, AND COVERSIP AS USUAL.

SOLUTION PREP. FOR NEU IMMUNOSTAINING

**10% NORMAL RABBIT SERUM: 5 ML WHOLE RABBIT SERUM
45 ML PBS**

PRIMARY ANTIBODY - C-NEU(AB-3) ONCOGENE SCI.

DILUTION: 1:5000 IN 10% NORMAL RABBIT SERUM

- * ADD RHEUMATEX LATEX REAGENT 50uL/mL
- * ROTATE IN 4 DEGREES CELCIUS FOR 2 HRS. OR
OVERNITE.

NORMAL MOUSE IgG:SAME AS C-NEU PREP.

****WHEN SPINNING DOWN IN THE CENTRIFUGE, THE TUBES SHOULD BE
BALANCED AND SPUN ON #7 FOR 10 MIN.(M DIGIOVANNA).**

****TRANSPORT ALL TUBES ON ICE.**

BRIDGING(SECONDARY) ANTIBODY: RABBIT ANTI- MOUSE

DILUTION: 1:50 IN 10% NORMAL RABBIT SERUM

- * ADD RHEUMATEX LATEX REAGENT 50uL/mL
- * ROTATE IN 4 DEGREES CELCIUS OVERNITE.

MOUSE PAP REAGENT: SAME AS SECONDARY ANTIBODY PREP.

DAB BATH : (REFER TO RESEARCH HISTOLOGY SOL'N PREP.)

REFERENCES:

IMMUNOSTAINING PROTOCOL FOR PARAFFIN SECTIONS

CRITICAL TECHNOLOGIES- T. DAVISON

Sections are placed on Silane coated slides and heated at approximately 60°C for 1 hour.

Procedure:

Day 1

1. Slides are deparaffinized in:
 - 4X (5 minutes each) Xylene
 - 3X (3 minutes each) 100% ETOH
2. MeOH/H₂O₂ (quench endogenous peroxidase) - 30 minutes
 - slides are placed in 100% ETOH again
3. Hydrate slides with tap H₂O approximately 5 minutes.
 - any pre- treatment is done after this step if necessary
 - proceed to Step #4
4. PBS - 5 minutes.
 - 1% PBS/BSA - 1 minute.
 - Wipe around section
5. Normal suppressor serum
 - ~ 30 minutes
 - aspirate serum without leaving tissue dry
6. Primary Ab
 - overnight at 4°C

Day 2

7. Rinse slides:
 - 3x - PBS
 - 1x - 0.01% Triton/PBS
 - 2x - PBS
8. Place in bath of 2°Ab
 - 20 minutes (GOAT ANTI RABBIT)
 - 30 minutes (HORSE ANTI MOUSE)
 - 60 minutes (GOAT ANTI RAT) This applies to "PR" staining only!

9. Rinse:

- 3x - PBS
- 1x - 0.01% Triton/PBS
- 2x - PBS

10. Label [3° - Streptavidin-peroxidase (SAP)] - (same times as 2° bath)

11. Rinse:

- 3x - PBS
- 2x - 0.01% Triton/PBS
- Let slides sit in last Triton/PBS for 2 minutes prior to step #12

12. Chromogen - diaminobenzidine tetrahydrochloride (DAB) or aminoethylcarbozole (AEC)**DAB - (must be filtered before use)**

- Place slides into DAB bath and check the control (**washing in DH₂O - first**) after 3 minutes.

NOTE: color development is usually complete after 5 minutes.

AEC - (wipe around section first)

- Place enough AEC to cover the section and incubate for approximately 20 minutes (most color development is complete by then).

13. Rinse chromogen into beaker with DH₂O (AEC - Only)

- Allow slides to rinse in running DH₂O for 5 minutes.

14. Counter stain

*** Rinse in tap H₂O between steps***

- 1. Hematoxylin - 1 minute Harris or Mayer's
- 2. Acid Alcohol - 2 dips (Omit if using AEC)
- 3. Ammonia H₂O - until blue

15. If using AEC - rinse slides in DH₂O and mount with Crystal Mount

- allow to completely harden before handling them.
- Place in 60°C oven for 20 minutes
- Dip in Xylene and coverslip as usual

16. If DAB was used - place slides into:

- 100% ETOH
- 100% ETOH
- 100% ETOH
- 50/50 - 100% ETOH/Xylene
- Xylene
- Xylene
- coverslip

Patient Name:
 Date of Birth:
 Breast Cancer Dx Date:
 Doctor Name (Doctor ID)

I. Vital Status and Disease Status

Please provide the following information to the best of your knowledge and with as much detail as you are able. If precise dates are unknown, please provide month and year or closest approximation.

1. When did you last see this patient? _____ / _____ / _____

2. What was the health status of this patient at that time?
 - Patient was without clinical evidence of disease (breast cancer).
 - Patient had clinical evidence of disease (breast cancer)
 - Localized Disease
 - Regional Disease (including lymph node involvement)
 - Metastatic Disease

3. What is the present vital status of this patient?
 - Present vital status is the same as indicated above in Question 2
 - Present vital status has changed from the above in the following way:
 - _____
 - Patient is Deceased
 Date of Death _____ / _____ / _____ (Or Estimate: _____)
month day year
 Cause of Death: Breast Cancer Related Other Cause:
 Cause unknown _____
 - Do not know

4. Time of diagnosis to first recurrence: When, if at all, did this patient experience a first recurrence of breast cancer?
 - First recurrence diagnosed _____ / _____ / _____ (Or Estimate: _____)
month day year
 - The patient did not have a first or any recurrence of breast cancer and has remained in remission up until the present, or until death from causes unrelated to breast cancer.
 - The patient achieved no remission of the cancer after diagnosis, i.e. no disease-free period after diagnosis.
 - Other, please explain: _____
 - _____
 - Do not know

5. To your knowledge, was the patient diagnosed with any other primary cancers after the initial breast cancer diagnosis?
 - Yes, Site: _____
 Date of Diagnosis of Second Primary: _____ / _____ / _____
month day year
 - No
 - Don't know

II. Treatments Received for Breast Cancer

Please provide any information on the breast cancer treatment that was administered to this patient. If you have knowledge of treatment administered by other providers, please note and include the physicians' names in the *Comments* section at the bottom of the page.

Surgeries (e.g. lumpectomy, mastectomy, node excision, reconstruction, TRAM)

Surgical Procedure Name

Date

Chemotherapy

Drugs Administered

Total Dosage

Start Date

End Date

- a. Did patient receive Growth Factor? No Yes, GCSF or GMCSF DK
- b. Did patient receive Erythropoietin? No Yes DK
- c. Did patient receive Peripheral Stem Cell Transplant? No Yes DK
- d. Did patient receive a Bone Marrow Transplant? No Yes DK
- e. Was patient transfused? No Yes DK

Radiation

Dosage

Number of Tx's

Area Covered

Start Date

End Date

Hormone Therapy (e.g. Tamoxifen)

Drugs Used

Dosage

Start Date

End Date/or Ongoing

Comments on Patient Treatment or Other Treatment Modalities

Name of Individual Completing this Form _____
Occupational Title _____

**RACE DIFFERENCES (BLACK/WHITE)
IN BREAST CANCER SURVIVAL. EARLY FINDINGS.**

**Beth A. Jones, Ph.D.,
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Despite a somewhat lower incidence of breast cancer in African American women relative to white women, there is a substantial black/white difference in survival from breast cancer. Data from the Surveillance, Epidemiology, and End Results (SEER) program for the years 1986-1992 indicate a five-year survival rate of 85% for white women compared with 70% for black women. While the survival rates for women of both races have improved significantly since the mid 1970s, the survival rates reported for black women in this latest time period are comparable to the survival rates achieved for white women nearly twenty years ago.¹ The purpose of the current investigation is to evaluate the survival in a cohort of black and white women who were diagnosed with breast cancer in Connecticut between 1987 and 1989, and to identify important prognostic factors, with special emphasis on explaining the black/white survival differential.

This follow-up study builds on the results of a completed, population-based investigation aimed at understanding social, psychological, and medical care factors that might explain the observed black/white difference in stage at diagnosis of breast cancer. Previously collected data (from the time of diagnosis) will be combined with newly collected data on molecular alterations (p53 and erbB-2) and tumor characteristics (e.g., DNA ploidy, estrogen receptor status) derived from laboratory testing of archived tissue blocks, as well as vital status information retrieved from the Connecticut Tumor Registry (CTR) to determine the following: 1) predictors of survival from breast cancer for all study subjects; 2) race-specific predictors of survival; and 3) the explanatory potential of prognostic variables in the black/white survival differential.

Keywords: Race, Survival, Blacks, Prognostic Factors, Breast Cancer

This work was supported by the U.S. Army Medical Research and Materiel Command under DAMD-17-96-1-6101

This is a population based study of 145 black women and 177 white women who were diagnosed with breast cancer in Connecticut between January, 1987 and May, 1989. Women were identified through active surveillance of 22 Connecticut hospitals. Extensive baseline information was collected from in-person interview and medical chart abstraction. In this first year of the follow-up study, information on vital status and cause of death has been obtained from the CTR. Preliminary data analysis includes bivariate analyses of race and potential prognostic factors using chi-square tests; predictors of survival have been evaluated with Kaplan-Meier product limit estimates and Cox proportional hazards models. In these preliminary analyses, all cause mortality is the outcome variable.

As of January, 1997, 113 women of the 322 breast cancer cases (35.1%) had died, with an average time to death of 4.2 years. Eighty-two (72%) of the deaths were confirmed breast cancer deaths. Among survivors, women were followed for a maximum of 9.6 years with an average follow-up of 7.2 years. Black women were significantly more likely to die than were white women during the follow-up period (age-adjusted Risk Ratio [RR] = 1.70, Confidence Interval [CI], 1.16-2.50). Although adjustment for stage at diagnosis (*in situ*/local vs. regional/remote) reduced the predictive value of race, black women were still significantly more likely to die from their disease than were their white counterparts (RR = 1.52, CI 1.03-2.24). Further adjustment of this model for one measure of socioeconomic status (years of education) did not alter these results.

Several tumor characteristics differed by race group, with black women more likely to be in the higher risk category. Using data abstracted from the medical chart, and adjusting for age, black women were more likely to have high grade tumors (Odds Ratio [OR] = 2.53, CI 1.08-5.91), lymphatic invasion (OR = 1.91, CI 0.99-3.69), necrosis (OR=1.48, CI 0.87-2.53), skin involvement 1.88 (0.66-5.36), nipple involvement (OR = 1.95, CI 0.77-4.99), estrogen receptor (ER) negative tumors (OR = 1.29, CI 0.70-2.39), and progesterone receptor (PR) negative tumors (OR= 1.50, CI 0.81-2.78). While several of these factors do not differ significantly between race groups, they suggest a tendency toward more aggressive tumors in black women. The lack of statistical significance may be a function of missing data as not all laboratory tests were performed on all tumors. Of the tumor characteristics listed above, only skin involvement remained a significant predictor of mortality after adjustment for age, race, and stage at diagnosis.

These preliminary results demonstrate a survival disadvantage for black women compared with white women with breast cancer, before and after adjustment for stage at diagnosis. Early findings suggest that the survival differential is not explained by race differences in socioeconomic status as measured with years of education. Over the course of the study, these findings will be expanded using more complete data on vital status, cause of death, and time to recurrence. Additionally, we will evaluate the prognostic significance of a wide range of factors including medical care and psychosocial variables, other tumor characteristics, and molecular alterations, thus permitting a multidisciplinary approach to understanding the black/white survival difference in breast cancer.

OTHER SUPPORT

Kasl, S.V.

Active

R01 CA 70731 (Jones) 9/26/95-6/30/99 15%

NCI \$185,956

Race Differences in the Screening Mammography Process

The major goals of this project are to examine racial differences in mammography screening in order to understand impact on race differences in stage at diagnosis.

1P60 AG10469 (Kasl) 8/1/97-7/31/02 15%

NIA \$158,689

Claude Pepper Center - Older American Independence Center; Research Development Core

The major goals of this project are to facilitate the development and testing of cost-effective interventions that maintain or increase functional ability among elderly persons.

1P60 AG10469 (Marottoli) 8/1/97-7/31/02 10%

NIA \$146,610

Driver-related Rehabilitative Intervention for the Elderly

The major goals of this project are to design an intervention to improve driving skills among frail elderly.

(Bradley) 7/1/97-6/30/00 5%

John Thompson Foundation \$105,635

Utilization, Cost, and Quality of End-of-Life Care for Terminally Ill Patients

The major goals of this project are to evaluate an intervention designed to increase the utilization of Hospice services.

MAYNE, SUSAN T. (Ph.D.)

ACTIVE

5P30 CA 16359-22 - (DeVita)	7/01/94 - 6/30/98	21%
NIH/NCI	\$1,210,390	

Comprehensive Cancer Center Core Support Grant

The major goal of this project is to provide administrative support and developmental funds for new faculty and support for Cancer Center core facilities.

RO1 CA64567-03 - (Mayne)	9/09/94 - 6/30/99	40%
NIH/NCI	\$392,123	

Beta-Carotene Chemoprevention of Head and Neck Cancer

The major goal of this project is to determine whether supplemental Beta-Carotene reduces the incidence of second malignancies in patients curatively treated for early stage cancer of the oral cavity, pharynx or larynx.

1 RO1 CA74567-01 - (Cartmel)	9/01/97 - 6/30/01	10%
NIH/NCI	\$163,812	

Increasing Fruit & Vegetable Intake in Head and Neck Cancer Patients

The aim of this project is to determine if the use of a tailored intervention based on the stage of change model will increase intake of fruit and vegetables in head and neck cancer patients and thereby increase plasma carotenoid levels by 30%. The intervention will be designed to be translatable to the normal medical care of these patients.

DONAGHUE - (Schonfeld)	1/1/98 - 12/31/98	5%
	\$59,915	

The Patrick and Catherine Weldon Donaghue Medical Research Foundation

This is a research study to investigate elementary school-age children's factual knowledge and conceptual understanding of cancer.