Social class and health attendance factors: prognostic factors for breast cancer survival in women who live in the city of Rio de Janeiro and who had been attended in the National Cancer Institute of Brazil

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INTRODUCTION

- Discussion about social inequalities had suggested that disadvantages experienced by people who lived a life into low economic social class have interfered on health levels

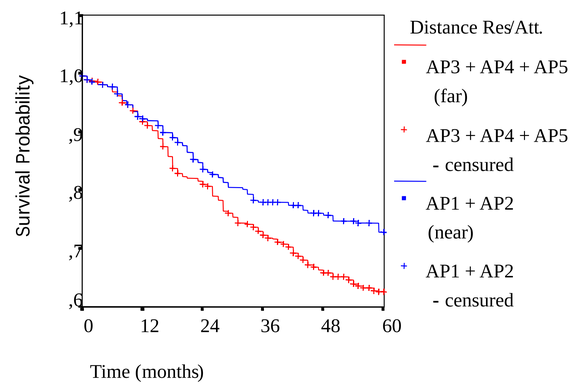
OBJECTIVE

- To assess social class and health attendance factors in this population study

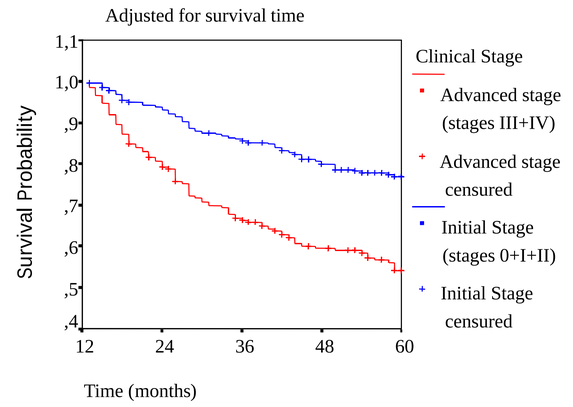
METHODOLOGY

- A total of 742 breast cancer cases from hospital-based cancer registry and medical records, diagnosed between 1992 – 1996 were analyzed. First, a stratified analysis was done. To determine survival rates, a survival analysis (Kaplan-Meier Method) was carried, followed by a Cox regression to determine the hazard ratio and the predictor model

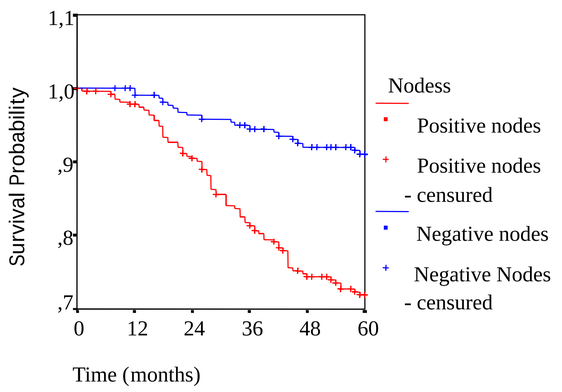
S(t) for distance between residence and attendance place at INCA/HC I



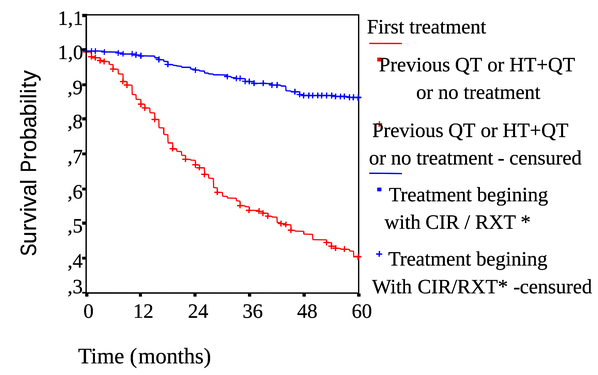
S(t) for Clinical Stage



S(t) for involved nodes



S(t) for first treatment



Defined Categories variables for Cox Model

value 0 = best prognosis
value 1 = worst prognosis

Variable	Defined categories
Survival time	= **60** people alive at 60 years or more = **real time on months** for death or lost for follow up
Vital status	= **0** censured (time ? 60 months of life; death < 60 months without breast cancer or lost for follow up) = **1** death < 60 months with death cause equal Breast cancer
Age	= **0** for age > 55 years = **1** for age ≤ 55 years
Clinical stage	= **0** local disease (0, I, IIa, IIb) = **1** extensive disease or metastasis (IIIa, IIIb and IV)
Nodes involved	= **0** for negative nodes = **1** for positive nodes
Metastasis	= **0** no presence of metastasis = **1** presence of metastasis
First Treatment (treatment = tto) CIR = Surgery RXT = Radiotherapy QT = Chemotherapy HT = Hormontherapy	= **0** for CIR only or with other tto RXT only or with others tto HT + CIR e HT + RXT = **1** for QT only or with other tto HT only or with other tto No treatment
Time between first visit and diagnosis	= **0** for time < 30 days = **1** for time ≥ 30 days
Time between diagnosis and treatment	= **0** for time < 35 days = **1** for time ≥ 35 days
Social class	= **0** for social class I, II, III = **1** for social class IV
Distance between residence and attendance place	= **0** for near residence (AP1 + AP2) = **1** for far residence (AP3 + AP4 + AP5)

The complete model tested was:

$$HR_i = \exp\left[\beta_1 \; AGE + \beta_2 \; CLINICAL\ STAGE + \beta_3 \; INVOLVED\ NODES + \beta_4 \; PRESENCE\ OF\ METASTASIS + \beta_5 \; FIRST\ TREATMENT + \beta_6 \; \Delta TVISIT / DIAGNOSIS + \beta_7 \; \Delta TDIAGNOSIS / TREATMENT + \beta_8 \; SOCIAL\ CLASS + \beta_9 \; DISTANCE\ RESIDENCE\ PLACE / ATTENDANCE\ PLACE\right]$$

Through Cox regression analysis the chosen model included four variables: distance between residence and attendance (DISTANCE), clinical stage of tumor (STAGE), involvement of lymph node (NODES) and first treatment modality (TREATMENT).

Variables	Coeficiente	Wald Test	Significance	*Hazard*	CI (95%) *Hazard*	
					mínimo	máximo
DISTANCE	-0,516	4,002	0,050	0,597	0,348	0,992
STAGE	-0,725	8,333	0,004	0,484	0,296	0,792
NODES	-0,838	9,459	0,002	0,433	0,254	0,738
TREATMENT	-0,906	14,586	0,000	0,404	0,254	0,643
-2 Log Likelihood	Qui-square	Significance				
847,686	59,452	0,000				

RESULTS*

- Correlation test (qui-square)
  No correlation among prognostic variables was observed.

- Mantel Haenszel Testr
  There was a positive association between social and demographic vaiables, tumor variables and first treatment; however, waiting time between first visit and diagnosis, and time between diagnosis and first treatment, presented a negative association.

- Survival Analysis
  All variables, except for age, presented differences between categories for the best and the worst prognosis.
  For social and demographic variables, in general, the 5-year risk of death for best prognosis was 71% and 62% for the worst prognosis variables.
  For tumor related variables, the 5-year survival rate in women with negative lymph node was 91%; in advanced clinical stage it was 50%.
  For attendance to health services variables, the waiting time between first visit and diagnosis up to 30 days, at 5-year survival, the rate was 70%.

* Using $p < 0,05$.

Conclusion

- The survival probability, for five years, in women with diagnosis (1992 to 1996) of breast cancer in INCA/HC I – Rio de Janeiro/Brazil, was 65%.

- There are few studies addressing social and health attendance factors in the brazilian population given the existing difficulties in health and education services.

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