

Poster
5151



Breast conservation in the treatment of T2 breast tumors Analysis of 1988-2003 Seer Data.

Rouzier R, Lesieur B, Gligorov J, Huguet F, Uzan S.

Univesity Pierre et Marie Curie, Paris 6, Prediction Unit and Dpt of Obstetrics and Gynecology, Paris, France.



Abstract

Background

andomized trials which studied the effect of local therapy (lumpectomy [BCT] vs mastectomy) demonstrated similar survival for the different treatment groups despite substantial improvement in local control with additional surgery and radiation therapy. The results from these trials were widely interpreted as providing strong evidence for the systemic theory of breast cancer. However, in these trials, there were insufficient events to detect small, but clinically important, differences in overall mortality. We sought to investigate if survivals of patients treated with T2 tumors were similar between patients treated with lumpectomy and mastectomy in the SEER database.

Materials & Methods

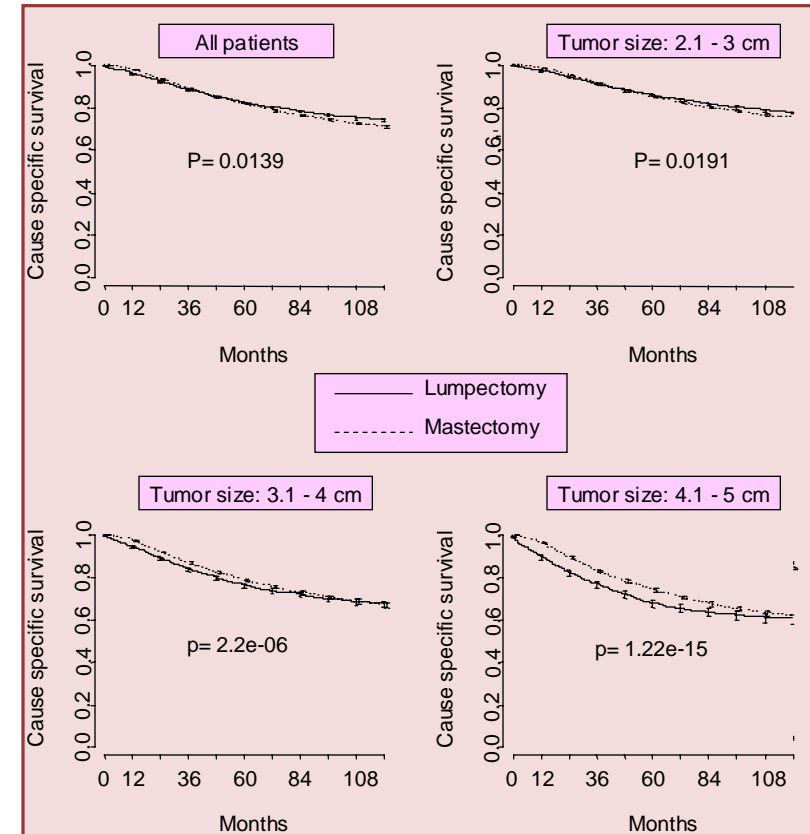
Using the SEER registry public (<http://seer.cancer.gov/>) use data tapes provided from 17 registries (Alaska Natives, Atlanta, Connecticut, Detroit, Hawaii, Iowa, Los Angeles, New Mexico, San Francisco-Oakland, San Jose-Monterey, Seattle-Puget Sound, Rural Georgia, Utah, Greater California, Kentucky, Louisiana, and New Jersey), we identified patients diagnosed with breast cancer from January 1, 1988 through December 31, 2003. The SEER registry includes patients from 1973 but information concerning the number of examined nodes and metastatic nodes is unavailable for patients managed before 1988. Case listings were generated using codes specific for extent of disease, age at diagnosis, year of diagnosis, histological data, treatment, survival, and cause of death. Cause specific survival was measured by SEER as the time from diagnosis to date of death and date of last follow-up, respectively. We used the Kaplan-Meier product limit method to describe survival and the log-rank test to assess differences between patient groups. The multivariate survival analysis was performed using a Cox proportional hazard model. The multivariate model included age, histological grade, Estrogen receptor status, treatment modalities : extent of surgery, and lymph node status. All tests were two tailed, and p values < 0.05 were considered to denote significant differences. All analyses were performed using the R package with the Design, Hmisc, and Survival libraries. (<http://lib.stat.cmu.edu/R/CRAN/>).

Number of patients

Tumor size	BCT	Mastectomy
2.1 – 3 cm	35995	44627
3.1 – 4 cm	10663	20860
4.1 – 5 cm	4476	11833
radiation	2283	3872
no radiation	2193	7961

Results

Univariate survival analysis of patients with T2 according to tumor size



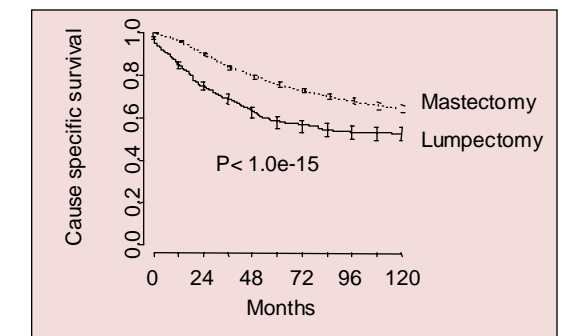
	5-year cause-specific survival		10 year cause-specific survival		P value
	BCT	Mastectomy	BCT	Mastectomy	
2.1-3 cm	85.6%	85%	77.5%	75%	0.0191
3.1-4 cm	76%	78.5%	67.2%	66.8%	2.2e-06
4.1-5 cm	67.5%	74%	60.6%	61.6%	1.22e-15

Multivariate survival analysis

	OR	95%IC	p
number of positive nodes	1.07	1.07 1.07	< 10 ⁻¹⁵
grade	1.64	1.61 1.67	< 10 ⁻¹⁵
Er status=pos	0.57	0.55 0.58	< 10 ⁻¹⁵
=unk	0.72	0.71 0.74	< 10 ⁻¹⁵
size	1.02	1.02 1.02	< 10 ⁻¹⁵
age	1.01	1.01 1.01	< 10 ⁻¹⁵
surgery : BCT / mastectomy	0.98	0.94 1.01	0.49
radiation	0,76	0.73 0.79	7.65e-13
surgery * radiation	1.49	1.42 1.56	< 10⁻¹⁵

Surgery type is not significant while the interaction between surgery and radiation is highly significant.

Subgroup survival analysis: tumor size: 4.1 – 5 cm, no radiotherapy



Interpretation

Multivariate analysis and subgroup analysis show that absence of radiation after BCT results in lower survival and may explain difference observed in univariate analyses , especially for tumor measuring between 4.1 and 5 cm. p= 1.22e-15

T2 tumor patients should not be treated with BCT if adjuvant radiation therapy cannot be administered.