Prognosis of 368 women with primary breast cancer during pregnancy: results from an international collaborative trial

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Abstract

Although breast cancer treatment during pregnancy has been shown feasible,[1] the outcome data on breast cancer diagnosed during pregnancy (BCP) are limited. Here, we compared 368 women with BCP with 2739 non-pregnant women and performed a Cox proportional hazards regression analysis of disease-free survival (DFS) and overall survival (OS). The results suggest a similar prognosis for patients diagnosed with breast cancer during pregnancy compared to non-pregnant patients.

Objectives

The aim of this study is to estimate the prognostic impact of pregnancy when breast cancer is diagnosed. We recently described the obstetrical and neonatal outcomes of BCP.[2] Here, we used this series to compare survival between women with breast cancer diagnosed during pregnancy and patients who did not have associated pregnancies.

Methods

In this cohort study, a multi-centric registry of BCP patients originating from seven European countries (www.cancerinpregnancy.org and GBG/BIG 0203 www.germanbreastgroup.de/pregnancy) compiled pro- and retrospectively between 2003 and 2011, was compared with non-pregnant breast cancer patients, aged ≤ 45 years. The main analysis was a Cox proportional hazards regression of disease-free survival (DFS) and overall survival (OS) on exposure (pregnant or not) with the following set of covariates: age, stage, grade, hormone receptor status, HER2 status, histology, type of chemotherapy and use of trastuzumab.

Table 1. Subgroup analyses show no effect of the breast cancer diagnosis made during pregnancy

Variable	p-value DFS	p-value OS
Hormonal receptor status	0.62	0.71
Molecular subtype	0.16	0.20
Age	0.62	0.23
Node involvement	0.38	0.97
Type of chemotherapy	0.44	0.20

Results

We compared 368 women with BCP with 2739 non-pregnant women. Median age was 33 years for the pregnant and 41 years for the non-pregnant patients. Median follow-up was 57 months. There were no statistically significant differences noted **for DFS (HR=1.18; 95% CI 0.90-1.56; p=0.23), and OS (HR=1.04; 95% CI 0.72-1.51; p=0.82).** Observed five-year DFS was 63% for pregnant and 74% for non-pregnant patients, respectively; five-year OS was 80 and 86%. This finding was supported by several sensitivity analyses (Table 1).

Conclusions

The results suggest a similar prognosis for patients diagnosed with breast cancer during pregnancy compared to non-pregnant patients. This information is important when patients are counselled and support the option to continue the pregnancy and treat the breast cancer.

References

1. Amant F, Loibl S, Neven P, Van Calsteren K. Breast cancer in pregnancy. *Lancet* 2012 11;379(9815):570-9.
2. Loibl S, Han SN, von Minckwitz G, Bontenbal M, Ring A, Giermek J et al. Treatment of breast cancer during pregnancy: an observational study. *Lancet Oncol* 2012 13; 887-896.

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www.cancerinpregnancy.org and www.germanbreastgroup.de