

## Adverse maternal cardiac and fetal outcomes in pregnant women with treated cancer

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**Background:** Cardiac toxicity from cancer treatment is the leading non-malignant cause of death among adult survivors. As an increasing number of female cancer survivors enter reproductive age, there is little data on the impact of prior cancer treatment on maternal cardiac and fetal outcomes. The aim of this study is to investigate the incidence of the maternal cardiac, fetal/neonatal and obstetrical complications during pregnancy.

**Methods:** Medical records of patients who have been followed in the Pregnancy and Heart Disease Research Program at the University Health Network and Mount Sinai Hospital between 2012 and 2015 were reviewed. Patients were included if they were 18 years or older at the time of first antenatal visit, and had chemotherapy and/or radiation treatment prior to pregnancy.

**Results:** A consecutive cohort of 47 patients (mean age 34±5 years) were reviewed. Cancer diagnoses included lymphoma (38%), breast cancer (26%), leukemia (11%), sarcoma (8%), and others (17%). Patients were treated with surgery (51%), radiation (62%), and/or chemotherapy (92%). Of the patients who underwent chemotherapy, 60% had anthracycline-based regimens. Eight (17%) patients had a documented history of cardiomyopathy that was attributed to either prior chemotherapy or radiation treatment. Baseline LV systolic function was mildly or moderately reduced in 5 (11%) patients, and severely reduced in one (2%) patient. Major cardiac events occurred in 3 (6%) patients, who experienced worsening NYHA class or hospital admission for congestive heart failure. Four (9%) neonates were born at <37 weeks gestation, and four (9%) had birth weight <10th percentile. In terms of obstetrical outcomes, 3 (6%) patients developed pre-eclampsia, 2 (4%) had gestational hypertension, and one (2%) developed preterm premature rupture of membranes; there were two pregnancy losses at <20 weeks.

**Conclusion:** In this cohort of young women with prior cancer treatment, adverse maternal cardiac events were rare and only occurred in women with a documented history of cardiomyopathy. There was no maternal or fetal death. The overall incidences of fetal/neonatal and obstetrical complications were uncommon.