Supplementary Table 1. Associations of Daughter Breast Cancer with Main Study Variables Using Multiple Imputation Methods

Study Variable	Non-missing Sample $N_{cases}=44/N_{total}=2947$			Imputed Sample[1] $N_{cases}=129/N_{total}=8600$		
	HR	95% CI	p-value	HR	95% CI	p-value
Fetal/*in utero* Factors						
Ponderal Index[3]	0.22	0.06 – 0.87	0.030	0.43	0.19 – 0.98	0.045
Small-for-gestational age (SGA)[4]	2.44	0.94 – 6.33	0.067	1.25	0.69 – 2.24	0.461
High maternal weight gain (2nd trimester)[5]	2.28	1.19 – 4.35	0.013	1.72	1.07 – 2.77	0.025
High maternal weight gain (3rd trimester)[5]	1.09	0.55 – 2.15	0.809	1.03	0.69 – 1.54	0.877
Placental Factors						
High placental volume (>360 cm^3)[6]	1.76	0.89 – 3.48	0.106	1.34	0.77 – 2.33	0.290
Presence of fibrin deposition[7]	0.39	0.15 – 0.99	0.047	0.65	0.36 – 1.18	0.152
Occurrence of hemorrhage	0.33	0.08 – 1.41	0.136	0.34	0.12 – 0.94	0.038
Presence of placental tumor[8]	9.02	2.00 – 40.73	0.004	7.40	1.29 – 42.28	0.025

HR=Hazard Ratio; 95% CI=95% Confidence Interval, estimated from proportional hazards models.

[1]Hazard ratios for imputed sample were estimated using multiple stochastic imputation applied to Cox proportional hazards regression, implemented in SAS 9.4.

[2]The fully adjusted model included the maternal adjustment variables and all study variables entered concurrently, except for ponderal index and small-for-gestational age. Due to high collinearity the fully adjusted model for ponderal index did not include small for gestational age and conversely the fully adjusted SGA model did not include ponderal index. Maternal adjustment variables included: maternal history of breast cancer (yes vs. no), race (East-European vs. all other), overweight at pregnancy baseline measure (BMI $\geq$25 kg/m^2 vs. other), and week of gestation (continuous).

[3]Ponderal index was calculated as [birthweight (g) / birth length (cm^3)] x 100 and represented as a 4-category ordinal variable coded at quartile medians: 2.14, 2.35, 2.51 and 2.75 respectively for quartiles 1-4. The hazard ratio shown is for an increment of one unit.

[4]Small for gestational age was defined as the lowest decile of the birth-weight-for gestation standardized score vs. all other.

[5]High trimester-specific maternal rates of weight gain were represented as the 4th quartile of weight gain for each trimester vs. all lower quartiles. High 2nd trimester rate of weight gain was equivalent to $\geq$1.1690 pounds per week and high 3rd trimester rate of weight gain was equal to $\geq$0.9996 pounds per week.

[6]High placental volume was represented as a dichotomous variable, >360 cm^3 (above the median) vs. $\leq$360 cm^3 (at or below the median).

[7]Fibrin deposition was defined as the presence of maternal floor infarction and/or massive or diffuse and patchy subchorionic fibrin vs. absence.

[8]Placental tumors were reportedly benign chorioangiomas as described by Benirschke [K. Benirschke, Examination of the placenta, Obstet. Gynecol. 18(3) (1961) 309-333].