

Breast Cancer Risk Tied to Prior Placental Weight

BY MARY ANN MOON
Contributing Writer

A woman's risk of premenopausal breast cancer appears to be related to the weight of the placentas from her pregnancies, Sven Cnattingius, M.D., Ph.D., of the Karolinska Institutet, Stockholm, and his associates reported.

The heavier the placental weight, the higher the risk that breast cancer will develop before the woman reaches 50 years of age, the researchers said.

Placental weight can serve as an indirect marker of hormonal exposure during pregnancy, since the placenta is the major source of most pregnancy hormones. "Our findings support the hypothesis that exposure to pregnancy hormones during the limited time-window represented by a pregnancy appears to influence mothers' subsequent risk of breast cancer," Dr. Cnattingius and his associates said (JAMA

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The findings appear to show that higher levels of pregnancy hormones substantially raise the risk of breast cancer. Alternatively, it is possible that higher placental weights are associated with lower maternal

levels of antiestrogenic hormones such as testosterone and α -fetoprotein, which may play an inhibitory role in the development of breast cancer. Or it may turn out that higher placental weights are related to higher levels of other substances, such as insulinlike growth factor, that may promote carcinogenesis in the breast.

It is also possible that some other, as yet unidentified, factor acts simultaneously to increase placental weight and raise the mother's risk of breast cancer, they said.

They studied prospectively collected data on the singleton births of 314,019 Swedish women who delivered between 1982 and 1989. More than 121,000 of these women also had a second singleton birth during that study period. The women were followed until 2002. A total of 2,216 of these women (0.7%) developed breast cancer during follow-up, and 95% of them were diagnosed before they reached age 50.

The incidence of breast cancer consistently increased with rising placental weight, from 3.99 per 10,000 person-years when placental weight was 499 g or less to 5.30 when placental weight was 700 g or more. In the subset of women who had multiple deliveries, those with higher placental weights in two pregnancies had double the breast cancer risk of women who had lower placental weights in two pregnancies.

In contrast, breast cancer incidence was not related to birth weight or length of gestation, after the data were adjusted for placental weight. This finding indicates

that placental weight is "a better indicator of the hormonal milieu than birth weight" or other birth parameters, Dr. Cnattingius and his associates said.

They added that in their study, breast cancer risk was not found to be related to other potentially relevant risk factors such as the infant's gender, pregnancy complications, and maternal demographic traits.

The link between placental weight and breast cancer risk was more pronounced among women who were 30 years of age

or older when they had their first child. This finding supports the suggestion that elevated pregnancy hormones may promote the growth of either premalignant cells or preexisting malignant cells in the breast, because women of older child-bearing age would be more likely to harbor cells whose malignant transformation has already begun, the investigators said.

They noted that placental weight is "an imprecise measure of the endocrine capacity of placental tissue." Placental weight

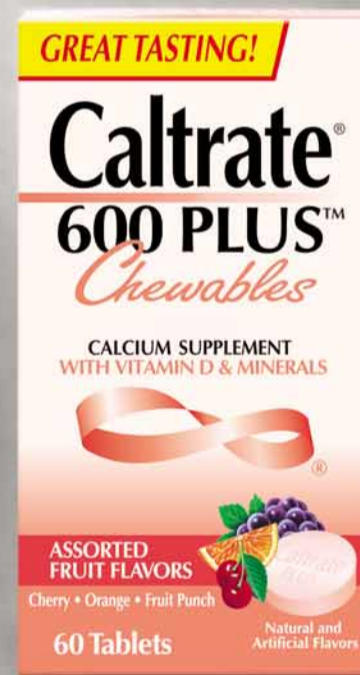
includes both vital tissue and degenerative tissue, since the placenta stops growing before the fetus does. "Moreover, the amount of blood in the placenta influences placental weight, and routines to clear the placenta from blood after childbirth may differ between hospitals."

Despite this limitation, the study "was able to demonstrate a substantially increased risk in maternal breast cancer associated with higher placental weight," they said. ■

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References: 1. Office of the Surgeon General. *Bone Health and Osteoporosis: A Surgeon General's Report: What Is Bone Disease?* Available at: www.surgeongeneral.gov/library/bonehealth/factsheet1.html. Accessed November 19, 2004. Page 3. 2. *Bone Health and Osteoporosis: A Report of the Surgeon General*. Washington, DC: Office of the Surgeon General, US Dept of Health and Human Services; 2004:12.

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