When pregnant women get cancer, what happens to their babies?

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A cancer diagnosis is always upsetting, and that's especially true when the patient is pregnant. A new study may reassure these patients that their babies can turn out fine despite exposure to the disease and the resulting treatments.

In their first few years of life, these children scored just as well on tests

of cognitive development and cardiac function as similar children whose mothers were cancer-free, according to a report published in Thursday's edition of the *New England Journal of Medicine*. However, the children of cancer patients were more likely to be born prematurely.

Researchers from the International Network on Cancer, Infertility, and Pregnancy in Europe embarked on the study because very little is known about how cancer affects a developing fetus. Such cases occur rarely - only about once per 1,000 pregnant women, according to an editorial that accompanies the study. That means a typical obstetrician will treat only a handful of women with cancer in his or her career. Oncologists aren't likely to encounter many pregnant patients either.

"Specialty care providers find themselves in unfamiliar territory when cancer is diagnosed in a pregnant woman," according to the editorial.

But women who find themselves in this unfortunate situation have to make treatment decisions anyway, and the lack of reliable information surely influences their thinking, the study authors wrote. In the face of so much uncertainty, patients have "a high threshold for initiating chemotherapy and a low threshold for terminating pregnancy," they wrote.

For their study, the researchers identified 129 children who had prenatal exposure to their mother's cancer. Among these children, 74 percent were exposed to chemotherapy in utero, 2 percent were exposed to other drug treatments and 9 percent were exposed to radiotherapy. (Some of the children were exposed to more than one of these treatments.) In addition, 10 percent of the kids were still in utero when their mothers had surgery, and 11 percent were born to mothers who opted not to have any cancer treatments until after their babies were born.

Each of these 129 children was matched with a "control" child who was

born at the same gestational age. In each pair, the kids were the same age when they were tested for cardiac and cognitive function. All of the matched controls were born to mothers who were cancer-free.

In each group, the researchers put 47 children who went through a battery of heart tests when they were 36 months old. Heart rate, blood pressure and other measures of cardiac function were the same for kids in both groups, and all of their hearts were free of structural abnormalities, the researchers found.

Cognitive function was measured at either 18 or 36 months using the Bayley Scales of Infant Development. Most children in both groups received scores in the normal range, and there were no overall differences between kids with prenatal exposure to cancer and the healthy controls, according to the study. Even when the researchers analyzed the children in separate groups based on the type of cancer treatment they weathered in utero, they found no significant differences compared to the healthy controls.

However, the children of the cancer patients were different in one important respect: They were much more likely than children of healthy mothers to be born prematurely. Among the 129 kids in the study, 11 were very preterm (born between 27 and 31.9 weeks' gestation), 16 were moderately preterm (born between 32 and 33.9 weeks' gestation) and 52 were late preterm (born between 34 to 36.9 weeks' gestation).

Altogether, 61 percent of these children were born prematurely. That compares with preterm birth rates of 7 percent to 8 percent in the countries where these children were born (Belgium, the Netherlands, Italy and the Czech Republic). The earlier the children were born, the lower their scores on the cognitive function tests, the study authors found.

In addition, 25 percent of the kids exposed to chemotherapy and 36 percent of those exposed to radiotherapy were considered small for their gestational age. In the control group, 15 percent of children got this designation, according to the study.

Overall, the results may offer some comfort to pregnant women who learn they have cancer, the researchers concluded.

"Children who had prenatal exposure to cancer and the associated stress, imaging studies, and treatments had normal development," they wrote. "Our data suggest that the diagnosis of cancer during pregnancy is not necessarily an indication to terminate the pregnancy."

The authors of the editorial said the findings should help put women at ease.

"These data should be reassuring to women who are facing a new diagnosis of cancer during pregnancy and to their families," they wrote.