

Study says children of women exposed to chemotherapy in pregnancy develop as well as other children

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A study published Online First by *The Lancet Oncology*, and linked to The *Lancet* Series on cancer in pregnancy, shows that children of women exposed to chemotherapy while pregnant develop as well as children in the general population. The study is by Dr Frédéric Amant, Multidisciplinary Breast Cancer Center, Leuven Cancer Institute, Katholieke Universiteit Leuven, Belgium, and colleagues.

The authors assessed 68 pregnancies (producing 70 [children](#)) during which 236 cycles of [chemotherapy](#) were administered (on average three or four per pregnancy). The median gestational age at [cancer](#) diagnosis was 18 weeks. The children were born at a median of 36 weeks into pregnancy, with more than two thirds of the women (47) giving birth at less than 37 weeks. The children assessed ranged in age from 1.5 to 18 years.

The tests included clinical neurological examinations, tests of the general level of cognitive functioning (Bayley or intelligence quotient [IQ] test), electrocardiography and echocardiography, and a questionnaire on general health and development. For children aged five years or older, additional tests were performed: audiometry, the Auditory Verbal Learning Test, and subtasks of the Children's Memory Scale, and the Test of Everyday Attention for Children, and the child's parents also completed a standard 'Child Behavior Checklist'.

The authors found that although neurocognitive outcomes were within normal ranges, cognitive development scores were lower for children who were born preterm than for those born at full term. However, they emphasise that this difference is found in any group of children born prematurely, not just those in this study. When controlling for age, sex, and country, the score for IQ increased by an average 12 points for each additional month of gestation. The measurements of the children's behaviour, general health, hearing, and growth corresponded with those of the general population. Heart dimensions and function were within normal ranges. The authors identified a severe neurodevelopmental delay in both members of one twin pregnancy, though all the specialists involved believed this was not linked to the chemotherapy administered.

The authors say: "We show that children who were prenatally exposed to chemotherapy do as well as other children... Our findings do not support a strategy of delay in chemotherapy administration or iatrogenic (ie physician induced) preterm delivery with post-partum chemotherapy administration to avoid harm to the fetus." They add: "The decision to administer chemotherapy should follow the same guidelines as in non-pregnant patients. In practice, it is possible to administer chemotherapy from 14 weeks gestational age onwards with specific attention to prenatal care."

The authors say that further follow-up of more children over a longer period will be the only way to increase certainty that chemotherapy in pregnancy does not harm the health of the unborn child.

In a linked Comment, Dr Elyce Cardonick, Department of Obstetrics and Gynaecology, Division of Maternal-Fetal Medicine, Cooper University Hospital, Cooper Medical School of Rowan University, NJ, USA, says: "The study by Amant and colleagues has the potential to affect clinical practice: if we can present this reassuring data to pregnant women with cancer, women might be more likely to accept treatment

during pregnancy when indicated. This report might encourage oncologists and obstetricians to recognise the advantages of collaboration when the subject under study such as cancer in [pregnancy](#) is rare."

More information: Paper online: [www.thelancet.com/journals/lan ...](http://www.thelancet.com/journals/lan...)
 [\(11\)70363-1/abstract](http://www.thelancet.com/journals/lan...)

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