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Cancer drug for mums-to-be may curb baby girls' future fertility

Chemotherapy treatment during pregnancy may affect the future fertility of unborn baby girls, a study suggests.

Researchers have found that a drug called etoposide can damage the development of mouse ovary tissue grown in the lab.

The drug affects specialised cells called germ cells, which give rise to eggs. Further research is needed to assess whether the drug has similar effects on human tissue.

Experts say their findings may mean that affected baby girls should be warned in later life that they may undergo an early menopause.

Around one in 1000 pregnant women are diagnosed with cancer. Doctors and patients have to make difficult decisions to try and save the lives of both mother and baby.

Etoposide is used to treat several types of cancer and is considered safe for use in the second and third trimester of pregnancy because it has a low risk of miscarriage and birth defects.

Little is known, however, about the longer terms effects of the drug on the unborn baby in later life.

A woman's reproductive lifespan is determined before birth, while the ovaries are developing in the womb. The second and third trimesters are particularly important as that is when female germ cells form structures called follicles that determine how many eggs she will be able to release in her lifetime.

Scientists at the University of Edinburgh studied the effects of etoposide treatment on the development of mouse ovary tissue grown in the lab.

They found that treatment before the follicles had developed wiped out up to 90 per cent of the germ cells, even at doses that are low relative to those given to patients.

Treatment after the follicles were developed had no significant adverse effects, the research shows.

Follicle development begins around 17 weeks into the baby's development in the womb and is not completed until the later stages of pregnancy.

Lead researcher Professor Norah Spears, of the University's Centre for Integrative Physiology, said: "If the results we have seen in these mouse studies are replicated in human tissue, it could mean that girls born to mums who are taking etoposide during pregnancy have a reduced fertility window."

The study is published in the journal *BMC Cancer* and was funded by the Medical Research Council and the Biotechnology and Biological Sciences Research Council.

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