

Research sheds new light on cells implicated in recurrent miscarriage

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(Medical Xpress) -- University of Birmingham scientists have discovered that one of the body's key immune cells remains active against the fetus during pregnancy, a finding that offers fresh understanding of the complex relationship between the mother and baby during pregnancy and offers insights to the potential causes of miscarriage and stillbirth among women.

In a study published in the *Journal of Immunology* today Dr David Lissauer and colleagues in the School of Clinical and Experimental Medicine and the School of Cancer Sciences used new techniques to detect a type of T-[cells](#) known as CD8 that were directed against the fetus during [pregnancy](#) and not deleted by the body, as previously thought.

In normal healthy pregnant women, further mechanisms must exist to prevent these cells from harming the developing baby. But this work indicates that in some women, where these protective mechanisms aren't working, the CD8 T cells are circulating in the mother's body, ready to potentially cause problems.

CD8 T cells are best known for their role recognising and attacking foreign organisms to protect the body from infection or causing the rejection of transplanted organs.

'This is a scientific observation that is important in understanding the complex relationship between mother and fetus,' says Dr Lissauer.

‘There may be some women in whom these cells are causing problems.

‘We now recognise that fetal cells and material crosses into the mother’s circulation during pregnancy and our work shows that this is sufficient to trigger the mother’s immune system to produce T cells directed against the baby. Of course, in most women mechanisms exist to protect the baby from these cells but we now need to find out what is going wrong in [women](#) who experience problems during pregnancy, like recurrent [miscarriage](#).

The team is collaborating with the PROMISE clinical trial being co-ordinated by the University of Birmingham, which is exploring progesterone as a potential treatment for recurrent miscarriage.

The team concludes: ‘Our observations indicate that the study of adaptive T-cell immune responses against the fetus should be an important area of future obstetric investigations.’

More information: Fetal-Specific CD8+ Cytotoxic T Cell Responses Develop during Normal Human Pregnancy and Exhibit Broad Functional Capacity. *Journal of Immunology*.

Provided by University of Birmingham

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