Herpes virus link to complications in pregnancy

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Researchers at Adelaide's Women's & Children's Hospital and the University of Adelaide, Australia, have made a world-first discovery that links viral infection with high blood pressure during pregnancy and pre-term birth.

The research findings, published in the *British Journal of Obstetrics & Gynaecology*, are a major step forward in unravelling the mystery of the cause of high blood pressure in pregnancy.

The research has been conducted by the South Australian Cerebral Palsy Research Group, based in the University of Adelaide's School of Paediatrics & Reproductive Health and the Women's and Children's Hospital Microbiology & Infectious Diseases Department.

Their work demonstrates, for the first time, that exposure to viral infection -- especially viruses of the herpes group -- may be associated with pregnancy-induced hypertensive disease (pre-eclampsia) and also with pre-term birth.

The research discovered the presence of viral nucleic acid in heel-prick blood samples from 1326 newborn babies, taken over a 10-year period. More than 400 of these babies were diagnosed with cerebral palsy.

"This is an exciting finding and further studies are now required to look at the link between viral exposure in pregnancy and genetic susceptibility to adverse pregnancy outcomes, such as high blood pressure, premature

delivery and cerebral palsy," says Professor Alastair MacLennan, leader of the research group.

Pregnancy hypertension (high blood pressure) occurs in up to 10% of first pregnancies throughout the developed world, such as in the UK, the United States and Australia. When untreated, it can lead to uncontrolled epileptic fits of eclampsia with loss of baby and mother. It is a common cause of maternal death in Third World countries.

The cause of high blood pressure in pregnancy has been an enigma for decades and a holy grail for many researchers.

The Adelaide research group has already demonstrated a link between viral infection in pregnancy, genetic mutations in genes controlling inflammatory and blood clotting processes, and the development of cerebral palsy.

The group has also found an association between several hereditary gene mutations with changes in inflammatory proteins that may cause dysfunction and constriction of the blood vessels of the placenta and brain, thus causing the rise in blood pressure in pregnancy. If not controlled, this can be lethal.

"We are just beginning to understand the interaction and importance of exposure to viruses and genetic susceptibility to infection both in pregnancy and the newborn," says Associate Professor Paul Goldwater, the virologist of the team.

Source: University of Adelaide