



MEDIA RELEASE

From: Bill Lane, Media Manager, Mercy Health

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A breakthrough drug discovery to combat preeclampsia, a deadly pregnancy complication

Worldwide, preeclampsia claims the lives of 500,000 unborn babies and 70,000 pregnant mothers. No drug until now has been discovered that slows preeclampsia from progressing to cause life-threatening injuries to major organs in the mother – her kidneys, liver, lungs and brain.

Today, a joint team of researchers in Cape Town, South Africa and at Melbourne's Mercy Hospital for Women (and the University of Melbourne) report the results in the prestigious *British Medical Journal* of a breakthrough clinical trial. Their exciting findings suggest the diabetes drug, metformin, may be the first ever disease-modifying drug discovered that slows preeclampsia in its tracks.

The idea of testing metformin as a treatment for preeclampsia came from laboratory studies conducted by the same research team at Mercy Hospital for Women. The team took the concept to colleagues in South Africa, where the disease is far more severe and common, where clinical trials were conducted.

"Preeclampsia that sets in at an early gestation, called preterm preeclampsia, is a highly dangerous variant of the disease where the risks to baby and mother are particularly high," said Professor Stephen Tong, Mercy Perinatal researcher and joint-senior investigator of the trial.

Professor Susan Walker, Mercy Perinatal researcher and joint-senior trial investigator, added: "When preterm preeclampsia sets in, we are often forced to deliver the baby prematurely as this is the only way to reverse the disease process and cure preeclampsia. Early delivery saves the mum from becoming gravely sick. But by doing this, we birth babies that are not fully developed and not ready to leave the womb. Babies born too early are at risk of developing permanent disability or even death," Professor Walker said.

Finding a drug that can curb the disease's severity could enable pregnancies affected by preeclampsia to safely continue for longer. The babies can be delivered at a less premature gestation, which may mean fewer disabilities and better lifelong health outcomes.

Previous efforts to find drugs to treat preeclampsia have not succeeded.

“Laboratory studies by our research teams at Mercy Hospital for Women (and University of Melbourne) identified metformin as a promising treatment for preeclampsia. This led us to test the idea in humans,” said Professor Tong.

In this trial, conducted at Tygerberg Hospital in South Africa, the researchers recruited 180 women with preterm preeclampsia between 26 and 31 weeks of pregnancy. Half the women received metformin tablets while the other half were given a placebo. The participants were not told whether they were taking the active drug or the placebo.

Associate Professor Cathy Cluver (University of Stellenbosch), who is the lead investigator working in South Africa, said: “What is really exciting is that the women who took metformin stayed pregnant for 7-8 days longer compared to those who took a placebo. Furthermore, their babies spent 12 days less in hospital. When we are dealing with this level of prematurity, an extra week in the mother’s womb is likely to be a really important gain that could translate into lifelong health benefits for the baby.

“It is the first time that a treatment given to mums with preterm preeclampsia to keep them pregnant for a week longer might have worked. It could mean that preterm preeclampsia can now be treated and that we can slow disease progression right down.”

The group is now gearing up to start a larger trial involving 500 participants to confirm its exciting discovery.

“If our findings are confirmed, it may mean that metformin could be used to save the lives of thousands of mothers and their infants,” said Professor Tong.

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