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ASIA EDITION

Researchers reduce childhood asthma with tailored intervention

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Researchers from the Hunter Medical Research Institute and the University of Newcastle (UON), in collaborationwith the University of Queensland and The Children's Hospital at Westmead, have confirmed that when a woman's asthma medication is optimally controlled during pregnancy, the rate of asthma in her offspring is nearly halved.

Asthma is one of the most common childhood diseases and impacts children's quality of life, leaving them more susceptible to growth delays and at higher risk of developing learning disabilities. In Australia, over 37,000 hospitalisations per annum are due to asthma, with children aged 0 -14 hospitalised at a significantly higher rate. Asthma can also be deadly if it is uncontrolled, with up to 400 deaths per year in Australia attributed to asthma.

In a new research, researchers from the Hunter Medical Research Institute and the University of Newcastle (UON), in collaboration with the University of Queensland and The Children's Hospital at Westmead, have confirmed that when a woman's asthma medication is optimally controlled during pregnancy, the rate of asthma in her offspring is nearly halved.

Peer reviewed and published in a leading international journal, the research demonstrates the benefits of using inhaled corticosteroids, precisely tailored to measurements of lung inflammation during pregnancy.

Professor Joerg Mattes, Director of the UON'S Priority Research Centre Grow Up Well, says that one of the holy grails of asthma research is to demonstrate that childhood asthma can be prevented. "If we can demonstrate that you can intervene

and it can lead to the prevention of asthma, it's exciting because prevention is better than a treatment."

In this recent study, researchers followed up on the asthma status of pre-school aged children born to asthmatic motherswho had participated in the Managing Asthma in Pregnancy (MAP) trial undertaken in collaboration with the John Hunter Children's Hospital. In that trial, one group was randomly allocated a traditional asthma-management approach while the other used a personalised approach by measuring a lung-inflammation marker and tailored treatment to the mother's lung inflammation and symptoms.

"With this new approach, pregnant women were on inhaled corticosteroids earlier, and it was adjusted according to the levels of inflammation in the lungs," Professor Mattes explained. "When we followed up on these children four to six years later we found that the rates of childhood asthma were very much reduced."

Dr Vanessa Murphy, who is now conducting the follow-up Breathing For Life trial with a larger cohort, says the ultimate research goal is to eliminate asthma. "Asthma is very unpredictable in pregnancy and we know that women who have poorly controlled asthma are more likely to have children who will develop asthma," Dr Murphy said.

"What we've found is that when women's asthma is controlled optimally by adjusting medication according to lung inflammation, is that we're potentially preventing bronchiolitis in babies, and reducing the rate of asthma in pre-schoolers who are susceptible," Dr Murphy explained.

It supports the benefits of regular inhaled steroid asthma preventer therapy during pregnancy for those women who need it for their asthma control instead of not taking the medication because of pregnancy. "It's better for the mother, and for the baby, to take the medications that are needed to have optimal asthma control," Professor Mattes concluded.

The team is now recruiting participants for further studies in Newcastle, Sydney, Brisbane and Canberra.

"If we can demonstrate that this approach works in a larger cohort we ultimately hope that this strategy will be incorporated into clinical practice," Dr Murphy explains. "It's a portable machine that takes 90 seconds to get a result and it would be very easy to implement in primary care."

The research has been published in The Journal of Allergy & Clinical Immunology and featured by the American Academy of Allergy, Asthma and Immunology. Collaborators include Dr Peter Sly from The Child Health Research Centre, University of Queensland, and Dr Paul Robinson from the Children's Hospital at Westmead.