

Breakthrough for babies

World-first study finds simple treatment for devastating seizures

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AUSTRALIAN scientists have discovered a way to treat seizures in newborns that will not only help protect their developing brain from further injury but may also provide the first new, safe and effective treatment in decades.

World-first research by a team at the Hudson Institute of Medical Research's Ritchie Centre and Monash University's departments of paediatrics and obstetrics and gynaecology in Melbourne has published the results of its study in

the *Annals of Neurology*. In the preclinical study, the team found an existing synthetic drug called ganaxolone – now used internationally to treat epilepsy in adults and young children – may also help improve seizure management in babies under four weeks of age.

Seizures are more common in the neonatal period than at any other stage of life.

Senior author Dr Tamara Yawno-Fegan said about 10 per cent of newborns with neurological disorders in Australia were diagnosed with seizures every year.

She said the study provided clinicians with the hope of a potential alternative treatment.

It offered strong evidence that ganaxolone not only reduced seizure burden, but also protected the developing brain, Dr Yawno-Fegan said.

The study was funded by an NHMRC grant and also a \$255,000 grant from the Cerebral Palsy Alliance, as seizures in neonates are strong predictors of long-term cognitive and

developmental impairment such as cerebral palsy.

The preclinical study found ganaxolone treatment resulted

in a greater than 80 per cent reduction in the number of seizures compared to the untreated group and seizures were shorter.

"There is a desperate need for research into new therapies that are both effective and safe for seizure management in newborn infants," Dr Yawno-Fegan said.

"No one has managed to do a comprehensive study comparing ganaxolone with phenobarbital, the current first-line treatment, until now."

Phenobarbital has been around since 1912 and is the oldest epilepsy medication still in use. Dr Yawno-Fegan said what was so exciting was that ganaxolone may offer multiple benefits.

"We think within the next two years we will be ready to start human clinical trials," Dr Yawno-Fegan said.

"It is always harder doing clinical studies on young babies, but we have the support from the team at Monash Children's Hospital, whose input has been essential for the design and implementation of this study."

She said results from the work would not only help reduce the incidence of neonatal seizures, but was also aimed to reduce lifelong disabilities that are associated with the presence of seizures in the neonatal period.



Dr Tamara Yawno-Fegan