

World-first vaccine candidate for newborns to help combat deadly rotavirus

July 21 2010

(PhysOrg.com) -- Australian researchers have begun clinical trials of a new vaccine to protect newborn infants against rotavirus, a life-threatening diarrhoeal disease that kills half a million children worldwide each year.

The vaccine candidate, developed by the Murdoch Childrens Research Institute, is the culmination of almost four decades of research in Australia by MCRI, the University of Melbourne and the Royal [Children's Hospital Melbourne](#) following the discovery of rotavirus by a team of staff led by Professor Ruth Bishop in 1973.

Current rotavirus vaccines are given to babies from six to eight weeks of age, which may leave [newborn infants](#) at risk of early infection and, in countries with limited health care access, may delay timely administration of the vaccine.

“This is a contribution of major importance to global child health by Australian researchers and one that has enormous potential to reduce suffering and mortality among the most vulnerable children around the world,” said lead researcher Professor Julie Bines of the University of Melbourne, MCRI and The Royal Children's Hospital Melbourne.

“The new vaccine candidate has the potential to save many thousands of lives by vaccinating babies at birth while they were still in a health care setting.”

“We aim to provide the RV3 vaccine at a lower cost than current vaccines available on the market. While we hope the vaccine will be available in Australia, our first priority will be the developing world, where 90 percent of rotavirus deaths occur.”

The vaccine will be made by Indonesian vaccine manufacturer BioFarma.

Rotavirus infection is the leading cause of severe dehydrating diarrhoeal illness and deaths in children under five worldwide, resulting in two million hospitalisations and more than 500,000 deaths each year.

Nearly every child in the world, regardless of income level or geographic location, will contract rotavirus before the age of three. While vaccinations are part of national immunisations programs in countries such as Australia and the USA, immunisation efforts in developing countries have been hindered by cost challenges.

“Our biggest challenge is getting vaccines to vulnerable children in a timely and cost-effective way,” Professor Bines said.

“If the trials are successful, our vaccine could offer a major boost for global efforts to reduce death and suffering from rotavirus in children worldwide.”

Babies are currently being recruited for a clinical trial of the [vaccine candidate](#) in Melbourne, which will be given in a single dose orally. If successful, it will be tested in babies in two larger international trials in Indonesia and New Zealand from 2011. The vaccine could be available in the market within five years.

The trials follow the global recommendation by the World Health Organization last year that all children be vaccinated against rotavirus infection in an effort to reduce child mortality worldwide.

The vaccine has been developed with financial support from international non-profit organisation PATH, the Federal Government's National Health & Medical Research Council, the New Zealand Health Research Council, the World Health Organization, and in collaboration with Indonesian [vaccine](#) manufacturer BioFarma.

Provided by University of Melbourne

Citation: World-first vaccine candidate for newborns to help combat deadly rotavirus (2010, July 21) retrieved 2 May 2024 from <https://medicalxpress.com/news/2010-07-world-first-vaccine-candidate-newborns-combat.html>

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