

Simple screening test identifies heart defects in newborns

5 August 2011

A simple test to measure blood oxygen in newborns has been shown to identify babies with life-threatening congenital heart defects, a major cause of infant mortality in the developed world, according to researchers from the University of Birmingham and Birmingham Women's Hospital.

The Lancet today (5 August) publishes online the results of the PulseOx study, the largest UK investigation into screening [newborns](#) for [congenital heart defects](#), which occur in 1 in 160 births in the UK.

More than 20,000 mothers and babies from throughout the West Midlands took part in the trial. Midwives used pulse oximetry to measure oxygen levels in newborns' blood via a small sensor placed on the skin of hands or feet. Babies with low oxygen levels soon after birth may be at increased risk of heart defects.

Current screening for heart defects involves ultrasound before delivery and routinely examining all newborns in the first 24 hours after birth. However these examinations often miss babies with serious [heart defects](#). PulseOx is an additional test which is carried out on the postnatal ward, before discharge from hospital and can be life-saving.

Babies who failed the PulseOx test were given a heart ultrasound. Of 195 babies with an abnormal result following the test, 26 had a major congenital heart defect and a further 46 had other important problems which required urgent treatment brought to attention by the test.

"It's usually performed within 24 hours of birth and is simple, painless and non-invasive," explains lead investigator Dr. Andrew Ewer. "A small probe is put on the baby's hand and then on the foot, the machine is switched on and you obtain a reading. That's it. It takes longer to undress the baby than it does to do the test.

"This study has shown conclusively that this test is advantageous," he goes on. "We would like to see all babies being routinely tested. In this way the test will pick up additional [babies](#) who might otherwise have become very ill or even died. I think we now have enough evidence to say that pulse oximetry screening should be incorporated into everyday clinical practice."

Debra Bailey, whose son Jason was born with congenital heart problems comments: "My son Jason's complex congenital heart condition wasn't diagnosed until he was four months old. I believe that if this test was administered at birth, it would have been picked up then and the outcome of his treatment would have been a lot different. I feel very strongly that this test should be made routine to give every child the best chance of a healthy life."

The research was carried out in six NHS trusts covering an area including Birmingham, Wolverhampton, Warwickshire and Shropshire.

Provided by University of Birmingham

APA citation: Simple screening test identifies heart defects in newborns (2011, August 5) retrieved 25 June 2022 from <https://medicalxpress.com/news/2011-08-simple-screening-heart-defects-newborns.html>

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