

Needle-Free Test for Premature Babies



Scientists at Queen's University Belfast have pioneered a new needle-free test to take the sting out of medicine testing in premature babies. The research will not only lead to greater accuracy in prescribing, but will also significantly reduce the trauma of such tests for newborn infants and their families.

In the first published research project worldwide on this new approach to testing medicines in children, the findings were announced in the US medical journal *Pediatrics*. The study, which involves the use of blood spots obtained from a simple heel-prick, took place in the Belfast Hospital for Sick Children and the School of Pharmacy at Queen's.

The research was carried out by a team from the University's School of Pharmacy in partnership with the Regional Neonatal Unit in the Royal Maternity Hospital. It was funded by the Health and Social Care Research and Development Office (HSC R&D) and Action Medical Research.

Principal Investigator, Queen's Professor of Pharmacy Practice James McElnay said: "This type of testing will obviously reduce the discomfort of medicine testing in these vulnerable patients. What is even more important, however, is that it will ensure maximum accuracy in calculating the most appropriate dose of a medicine for a sick child.

"Some 80 per cent of infants in intensive care in hospitals receive medicines which have not been appropriately tested or licensed for use in such young patients, and the dosage is usually calculated based on licensed doses for adults or older children. Sizable blood samples are then required to measure the concentrations of the drug in the infant's bloodstream.

"Our work opens up opportunities for using the same approach to study other medicines which are used in this manner in children, and we are currently studying a number of these."

The Queen's study involved the antibiotic metronidazole. The research team used single drops of blood collected on blotting paper from premature infants who were receiving the medicine as part of their routine care. The 'spots' were dried, analysed in the University's School of Pharmacy, and the results used to develop dosage guidance for doctors.

The above story is reprinted (with editorial adaptations by ScienceDaily staff) from materials provided by Queen's University, Belfast.

Journal Reference: M. Suyagh, P. S. Collier, J. S. Millership, G. Iheagwaram, M. Millar, H. L. Halliday, J. C. McElnay. Metronidazole Population Pharmacokinetics in Preterm Neonates Using Dried Blood-Spot Sampling. *Pediatrics*, 2011; 127 (2): e367 DOI: 10.1542/peds.2010-0807

Published on : Mon, 30 May 2011