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MRI autopsies could offer alternative to conventional techniques

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Minimally invasive autopsies, using a combination of MRI scans and other techniques, such as blood tests, can accurately determine the cause of death in fetuses and babies nearly as well as conventional autopsies, according to new research published in *The Lancet*.

Post-mortem MRI is currently offered by some medical centres in the UK, but until now, evidence for its accuracy compared to conventional autopsies has been scarce.

The study, led by led by Dr Sudhin Thayyil and Professor Andrew Taylor of University College London and Great Ormond Street Hospital, in London, UK, is the first large-scale study to compare the accuracy of minimally invasive autopsy techniques to conventional full autopsies. The researchers analysed results from 400 fetuses, babies and children who were undergoing autopsy, performing both conventional and minimally invasive autopsies in each case, to establish whether or not the cause of death established by the two autopsy techniques was the same.

For fetuses and babies younger than one year, the minimally invasive autopsy identified the same cause of death as the full autopsy for 92% of the cases studied. For children aged between 1 and 16 years old, the minimally invasive techniques were less accurate, with just over half (54%) of the two types of autopsies of children in this age group agreeing on cause of death. The authors suggest that this is because MRI was unable to detect the infections which were more likely to kill children in this age group.

According to Dr Thayyil and Professor Taylor, "The next step is to establish rigorous criteria which would allow doctors to judge when a minimally invasive autopsy might be appropriate. Information provided by autopsies is important, not just for determining an individual's cause of death, but because it can sometimes answer more detailed questions about recurrence risks, implications for other family members, advancing medical research and knowledge."

Consent rates for child autopsies in the UK have declined in recent years (from 55% in 2000 to 45% in 2007 for fetuses, and from 28% to 21% for newborn babies), despite increases in the number of parents offered autopsy. Parental objection was the main cause for an autopsy not being done, so the researchers hope that minimally invasive techniques may offer a more acceptable alternative to conventional autopsy in fetuses and some children.

In a linked Comment, Corinne Fligner and Manjiri Dighe of the University of Washington Medical Centre, Seattle, USA, say that, "Crucial to success of an integrated post-mortem diagnostic programme will be clear performance standards, regular audits, physician training, and sufficient and stable funding to attract, train, and retain specialists and provide state-of-the-art resources for radiology and pathology."

More information: www.thelancet.com/journals/lan … (13)60134-8/abstract

Provided by Lancet

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