

Embargoed: 00.01hrs London time (GMT) Monday 12 January 2009 to coincide with the publication of a major article [1] and report [2] into the complications of epidurals and spinal anaesthetics.

Largest ever prospective medical study shows epidurals and spinal anaesthetics are safer than previously reported

The largest ever prospective study into the major complications [3] of epidurals and spinal anaesthetics published in the *British Journal of Anaesthesia* today (Monday 12 January 2009) concludes that previous studies have over-estimated the risks of severe complications of these procedures. The study concludes that the estimated risk of permanent harm following a spinal anaesthetic or epidural is lower than 1 in 20,000 and in many circumstances the estimated risk is considerably lower.

The study finds that the risk of permanent injury (of whatever severity) is about 1 in 23-50,000. In betting terms, the odds of being badly injured by an epidural or spinal anaesthetic are considerably better than 20,000-to-1 against. The risk of being paralysed by one of these injections is 2-3 times rarer than of suffering any permanent harm. The risk for women requiring pain relief for labour or Caesarean section is lower still, the most pessimistic estimate of permanent harm is 1 in 80,000 and it may be much lower. A similarly low risk was found in procedures performed for chronic pain and in children.

The study also finds that the risk of harm when an epidural is used for surgery is considerably higher than the estimated risk of using it during childbirth: between 1 in 6,000 and 1 in 12,000. However, while these figures may appear high, they too are still considerably lower than many previous estimates, and Dr Tim Cook, a consultant anaesthetist at the Royal United Hospital, Bath who led the project believes there are other reasons to explain these figures: "It has been known for a long time that these complications occur more often after surgery. The reason is likely to be that many of these patients are elderly with medical problems and that the process of having surgery itself increases risks. Major surgery leads to severe pain and may mean that an epidural has to stay in place for several days. Epidurals are generally only used for the biggest most painful operations and it is probably the least fit patients who have the most to gain from these techniques. What the project has shown is that many complications of epidurals occur after major surgery in elderly unhealthy patients. The risks must also be balanced against the generally accepted benefits of epidurals."

The project's results are based on the voluntary participation of every hospital in England, Scotland, Wales and Northern Ireland. A national census identified over 700,000 spinals and epidurals performed in the UK National Health Service each year. All major complications of these procedures were identified by the project team for one year. Each complication was reviewed by an expert panel, which assessed the cause and severity of all permanent injuries. In the year of the study, depending on interpretation, there were 14-30 patients who suffered permanent injury: injuries ranging from numbness in a part of the legs to paraplegia or death. Of the harmed patients 5-13 were paralysed and 3-6 died. Most complications were judged to be unavoidable.

Dr Tim Cook says, "The results are reassuring for patients with all procedures and settings being lower risk than many previous estimates. It is likely that this study will become widely quoted as the definitive estimate of these rare but potentially catastrophic complications."

However, Dr Cook believes anaesthetists should not be complacent: "Although complications related to epidurals are rare, the profession still needs to examine how and why these complications arise and make steps to reduce their frequency. For instance, it is likely that the number of complications could be further reduced by a greater appreciation that prolonged weakness of the legs after an epidural or spinal is not normal and should be investigated by an experienced doctor to ensure a major complication is not developing."

Writing in an editorial that accompanies the paper in the *British Journal of Anaesthesia*, Dr Donal Buggy, a consultant anaesthetist at the Mater Hospital, Dublin, describes the report as, “a triumph not only for its authors and the NHS anaesthetists who delivered it, but also for UK NHS risk management systems, audit databases, and processes.” Dr Buggy asserts that “the primary achievement of the project is that it enables anaesthetists and patients to more accurately define the risk of the specific rare but devastating complications of these procedures.”

(ends)

Notes for editors:

[1] 3rd National Audit Project of the Royal College of Anaesthetists: Major complications of Central Neuraxial block. *British Journal of Anaesthesia*. An editorial will accompany the publication of the paper and will also be available on line. A pdf of the full paper and editorial is available on request from Helen Ison or at:

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The *British Journal of Anaesthesia* is the journal of the Royal College of Anaesthetists and is published by Oxford Journals, a division of Oxford University Press. Please acknowledge the journal as a source in any articles.

[2] The full report of the project will be published by the Royal College of Anaesthetists on 12th January at 12pm and will be available on the website at <http://www.rcoa.ac.uk/nap3>. This project was widely supported by a large number of medical organisations, medical indemnity organisations and by the Chief Medical Officers of all four countries in the UK.

[3] Major complications of spinals and epidurals include damage to nerves or the spinal cord by infection (meningitis and abscess), bleeding and blood clots (haematoma), direct damage to the nerves (needle injury or chemical injury) and poor blood supply to the spinal cord (ischaemia). All can cause permanent nerve injury including paralysis. A further complication occurs when a 'drug switch' or 'route switch' occurs: either the wrong drug is delivered as an epidural or spinal (drug switch) or a drug that should have been administered intravenously is used in as an epidural or spinal, or vice versa (route switch). The sensitivity of the nervous system and the type of drugs used means these mistakes can be fatal.

[4] Information on complications of spinals and epidurals is available from the Royal College of Anaesthetists website (<http://www.rcoa.ac.uk/docs/nerve-spinal.pdf> and <http://www.rcoa.ac.uk/docs/Epid-Analg.pdf>) The National Patient Safety Agency published a safety bulletin report (NPSA Safety Bulletin 21: Safer practice with epidural injections and infusions) (<http://www.npsa.nhs.uk/nrls/alerts-and-directives/alerts/epidural-injections-and-infusions/>)

Contact: (media inquiries only)

Charlie McLaughlan – Director of Professional Standards, Royal College of Anaesthetists
Tel: +44 (0)20 7092 1691 Email: cmclaughlan@rcoa.ac.uk

Tim Cook – Consultant anaesthetist, Royal United Hospital
Tel +44 (0)7970025209 Email: tcook@rcoa.ac.uk

Helen Ison – Communications Executive, Oxford Journals
Tel: +44 (0)1865 353043 Email: helen.ison@oxfordjournals.org

