Early analgesia for children with acute abdominal pain did not affect management or outcome

Research question Does pain relief mask the symptoms and signs of appendicitis in children with abdominal pain?

Answer In a small randomised trial, intravenous morphine had no measurable effect on the management of such children or their outcomes

Why did the authors do the study? Children who present to emergency departments with abdominal pain are rarely given pain relief because doctors worry that it could mask the symptoms and signs of appendicitis. Trials have already suggested that this doesn't happen in adults, and practice is changing. These authors wanted to find out if it's safe to give analgesia to children.

What did they do? One hundred and eight children were enrolled in a randomised double blind placebo controlled trial. They all presented to one emergency department with acute abdominal pain that had lasted less than two days. Fifty two of the children were given intravenous morphine (up to two doses of 0.05 mg/kg), and 56 were given intravenous normal saline. They were formally assessed by the attending doctor before and 15 minutes after each treatment. The children recorded their pain on a 10 cm visual analogue scale before and 15 minutes after each treatment. A surgeon assessed each child less than an hour after the child's first treatment, made a diagnosis, and recorded his or her confidence in it—from 0 to 100%. Further management was at the surgeon's discretion.

What did they find? The two groups of children had statistically indistinguishable management and outcomes. About half the children in each group had an immediate laparotomy (25/52 given morphine *v* 24/56 given saline), and most of these children had appendicitis (24/25 *v* 22/24). Nineteen children given morphine and 22 given placebo were admitted for observation. Of these, a similar number in each group later turned out to have appendicitis (7/19 children given morphine *v* 4/22 in the placebo group, $P = 0.29$). Overall, 15/52 children given morphine and 12/56 given saline had a perforated appendix. Four of the five children who had a negative laparotomy (normal appendix) were in the placebo group. Appendicitis was missed in one child in the placebo group, and in none in the group given morphine. The morphine had no demonstrable impact on the surgeon's confidence in his or her initial diagnosis (74% for both groups of children), but it did relieve the children's pain better than normal saline (2.2 cm decrease *v* 1.2 cm, $P = 0.015$).

What does it mean? In this trial, giving morphine to children with abdominal pain seemed to make little difference to their management or eventual outcome. The trial was small, however, and not powerful enough to resolve an important safety issue—whether giving early analgesia to children increases the risk of missing an inflamed appendix. The authors did a power calculation, but not until their study was complete. They estimate that, to answer this question with any certainty, a trial would have to recruit at least 2000 children.

Green et al. Early analgesia for children with acute abdominal pain. *Pediatrics* 2005;116:978-83.

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Editor's choice

An uncomfortable ride

Whatever the pros and cons for patients, the UK's healthcare reforms promise an uncomfortable ride for doctors. The *BMJ's* series on the NHS revolution, which continues this week, may be a wake-up call for doctors who haven't yet seen the writing on the wall.

Competition is changing the face of health care in the UK. As Nick Timmins explains (p 1193), competition in secondary care has already forced both the NHS and the private sector to change their behaviour. In response to the first wave of independent sector treatment centres (ISTCs), provided mainly by foreign contractors, BUPA and other private health providers have lowered their prices, and NHS surgical teams have raised their output considerably. Timmins quotes Simon Stevens, Tony Blair's former health adviser: if NHS consultants did not perform the operations there was "a bunch of Germans coming round the corner who would."

Martin Marshall and Tim Wilson paint a similar picture of the impact of competition in general practice (p 1196). They point out that private provision is and always has been a big part of NHS primary care, but market forces didn't impinge because general practitioners had a virtual monopoly. It was said that new entrants would find it hard to compete because GPs were already highly cost effective. But is this still the case? The new GP contract has greatly increased spending on general practice and reduced access. Are GPs in danger of pricing themselves out of a market that they did not realise existed?

Will the reforms improve quality as well as efficiency? Marshall and Wilson think that despite the quality improvements achieved in general practice in the past 10 years, new providers may be able to compete for discrete conditions, such as diabetes, but not for treating patients with complex comorbidities. They counsel against creating silos for different diseases or populations. Instead they argue for competition from more integrated models—larger primary care units created by mergers and takeovers of existing practices.

How should we judge the potential for these reforms to succeed? Marshall and Wilson say that we should do this based on whether they improve responsiveness to patients while maintaining quality and not damaging equity or efficiency. So what do patients want? Angela Coulter summarises what we know about this from patient surveys in primary care (p 1199). "Humaneness" ranks highest followed by competency and accuracy, patients' involvement in decisions, and time spent on care. But patients also see themselves as citizens and taxpayers, says Coulter. Changes that are perceived as undermining the founding principles of the NHS are likely to be strongly resisted.

With the whole future of the way doctors work in the balance (p 1154), can we put aside professional self interest and make decisions based upon whether the changes will deliver better care to patients? It's obviously easiest if both sets of interests are aligned, but in this period of transition they may not be. There will be winners and losers.

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