

Evidence-based perioperative care is lost in translation

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Evidence-based medicine is one of the most important tools used to improve the quality and efficiency of health-care. However, ensuring the practical impact of the wealth of clinical evidence that is available appears harder to realize than expected. The extent to which surgical practice remains impervious to the availability of high-quality clinical evidence is particularly apparent in perioperative care. Traditional approaches, designed to facilitate safe surgery rather than enhance recovery, remain widely used despite evidence that many components may be unhelpful or even harmful.

Mechanical bowel preparation was traditionally regarded as a 'cornerstone of safe colorectal surgery' because failure to employ it was believed to predispose the patient to anastomotic dehiscence and wound infection. However, not only has it clearly been shown to cause dehydration, electrolyte depletion and patient discomfort, it also fails to reduce complications and may even increase the rate of anastomotic leakage¹. Remarkably, bowel preparation remains standard practice for most coloproctologists².

In a similarly vein, the routine use of nasogastric intubation remains firmly entrenched in surgical practice, despite evidence that it may harm rather than help. Postoperative nasogastric drainage is used routinely in up to two-thirds of patients in the USA and Europe^{2,3}. This practice continues, despite a Cochrane review⁴ showing not only that it fails to achieve the intended reductions in anastomotic leakage and incisional hernia

development, but also that it increases pulmonary complications and delays gastrointestinal recovery.

Excessive administration of sodium-containing intravenous fluids is known to be associated with a significant incidence of iatrogenic complications⁵. Fluid regimens in which administration is carefully controlled⁶ seem to reduce not only postoperative gastrointestinal dysfunction but also cardiopulmonary and wound complications. There is considerable evidence that excessive prescription of sodium-containing intravenous fluids occurs frequently⁵, with less than a quarter of European centres implementing protocols that routinely restrict their use². Intraoperative fluid therapy can be optimized individually by monitoring with oesophageal Doppler ultrasonography. Such monitoring reduces complications, postoperative gastrointestinal dysfunction and length of hospital stay. Implementation of this technique has been so low in the UK that concern has been expressed in parliament regarding the failure of the National Institute for Health and Clinical Excellence to issue guidelines.

Despite evidence that it is unnecessary and harmful, major abdominal surgery remains firmly associated with a prolonged period of enforced perioperative starvation. Preoperative oral carbohydrate loading reduces postoperative insulin resistance and muscle weakness. Postoperative nutritional supplements help reverse postoperative weight loss and may reduce complication rates. These things are known, yet the implementation of

such measures remains patchy at best. Furthermore, although allowing patients to eat at an early stage after colorectal surgery has been shown to be safe⁷, many surgeons continue to deny their patients food or even oral fluids until bowel activity returns^{2,3}.

It is unclear why practice changes likely to confer such obvious benefits as reduced complications, reduced length of hospital stay and increased patient comfort are not widely adopted. The difficulties in translating the results of clinical evidence into practice have been highlighted previously in other areas. This is the case in the management of cardiovascular disease, one of the areas richest in clinical evidence. Compliance with national treatment guidelines, based on the findings of large-scale research studies, has been disappointingly low by healthcare professionals in the USA. Similar problems exist in relation to the management of critically ill patients.

The apparent 'roadblock' in the 'translational highway' seems to be at the very end of the road, where clinical evidence collides with the practical reality of the bedside. Development of evidence-based protocols does not automatically change clinical practice, even in units with a special interest in implementing evidence-based care⁸. Recognition of this problem by the National Institutes of Health in the USA has led to a series of initiatives in its 'Roadmap for Medical Research'. These include a clinical and translational science award programme and a key focus on research

aimed at enhancing best practice⁹. Instituting administrative and regulatory processes that associate 'quality' medical care with the implementation of evidence-based medicine, *inter alia*, and rewarding compliance when this occurs have proved effective. These moves are supported in the USA by the National Committee for Quality Assurance. Still, given the differences that exist between the funding and administration of healthcare in America and Europe, implementing a similar approach on this side of the Atlantic is likely to prove challenging.

The establishment in the UK of the National Institute for Healthcare Research (NIHR) and the National Health Service (NHS) Institute for Innovation and Improvement has provided an ideal opportunity to direct research funding to solve the practical difficulties of implementing evidence-based medicine and to link this to a system of patient-centred quality assurance. The NIHR Service Delivery and Organisation Programme recently stated that a future target of research will be 'evidence-based decision making'¹⁰. It seems illogical that the NHS should continue to fund

the acquisition of evidence when it is so often ignored. Frankly, money might be better spent determining why we do not apply what we already know.

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