



Persistent postoperative pain after surgery

The silent epidemic of chronic persistent postoperative pain (PPP) after surgery is at an increase, with the number of procedures being performed annually in USA. The first publication that identified surgery as a risk factor for PPP appeared in 1998.¹ This finding led to a dramatic increase in interest on this subject; searches on PubMed now reveal thousands of publications on this topic. Although there are several publications on this emerging topic, the definition of PPP itself has been varied in several of them and, as such, the incidence of PPP cannot be truly estimated. As an initial step, it is critical that an accepted definition of PPP be agreed on so the true incidence of PPP can be determined. Currently it is accepted that PPP should at least be of 2 months' duration² after the surgical insult but this is not based on scientific facts. The consequence of PPP can be variable from mild to severe loss of quality of life.

The publication by Kehlet et al in 2006³ very clearly outlined the possible pathophysiology for PPP and basically outlined three possibilities. PPP could be from an on-going inflammatory response or from a nerve irritation (neuropathic in nature) or it could be the genetic makeup of the patient that predisposes a specific patient to PPP. If it is the latter, if the specific genetic makeup can be identified, patients undergoing elective surgery can be informed of the risk of PPP and an informed decision can then be formulated. To achieve this, large clinical trials need to be carried out to identify the genetic profile of patients predisposed to developing PPP. By contrast if PPP is due to an on-going inflammatory process from the surgical insult, it will be the responsibility of the perioperative physicians to execute the appropriate clinical trials to determine the underlying pathology.

In 2010, the Food and Drug Administration formed a group called the ACTION (Analgesic Clinical Trial Innovations, Opportunities and Networks) and requested researchers and industry to undertake basic and clinical trials on prevention of PPP.⁴ The ACTION committee has made some recommendations for conducting clinical trials for PPP prevention.⁵ Clinical trials examining PPP need to include preoperative, intraoperative, and early and late postoperative parameters and the outcome (PPP) needs to be assessed at the defined time point. Preoperative pain is

consistently found to be a predictor for PPP, which might reflect an independent risk factor, but could well be a manifestation of predisposing factors. Similarly, increased postoperative pain is considered an independent risk factor for PPP. However, particularly with regard to this risk factor, it is very difficult to differentiate between causality and association. It may well be that patients with severe acute postoperative pain experience more sensitization and therefore develop more persistent postsurgical pain. However, it could also be that these patients have ongoing preoperative pain, and then severe postoperative pain would not be an independent risk factor. Last, but not least, these patients might have severe acute postoperative pain because the precursors of persistent postsurgical pain are already developing in the early postoperative period. The cost for treatment of PPP and the degree of disability from PPP are high and therefore any measures undertaken to decrease the incidence of PPP⁶ will have a significant impact on the health care resources.

The entire issue of this journal is dedicated to understanding PPP in different surgical conditions. Apart from the surgical types, this issue also carries some insight into the future measurements of PPP using functional magnetic resonance imaging. In addition, an understudied area of PPP is the psychological factors. Experts in psychology have constructed a detailed review of factors for PPP. On review of this issue, it will be very clear that the silent epidemic of PPP is increasing and we should be challenged to find appropriate interventions to stop or decrease it.

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