Postoperative nausea and vomiting (PONV) is one of the most common complications after general anaesthesia, mainly triggered by inhalation anaesthetics and postoperative opioids. However, current medications for PONV have limited efficacy and may even be associated with potential side-effects. For example, severe cardiac arrhythmias reported in association with droperidol led the US Food and Drug Administration (FDA) to issue a black box warning. Even though droperidol prolongs the QTc interval, its clinical relevance remains controversial. As a consequence, haloperidol is increasingly used in the perioperative setting. Unfortunately, haloperidol has now also been associated with severe arrhythmias, some with fatal outcomes, leading the US FDA to issue an alert (http://www.fda.gov/CDER/DRUG/InfoSheets/HCP/haloperidol.htm). As a consequence, the use of serotonin antagonists has increased. Yet, all of them, with the exception of palonosetron, are also associated with QTc prolongation. For example, severe arrhythmias have been reported after dolasetron use in Canada that has led to a strict black box warning through the Health Products and Food Branch (www.hc-sc.gc.ca/dhp-ms/medeff/adv/2006/anzemet_nth-aah-eng.php) that dolasetron is contraindicated for any therapeutic use in children and adolescents under 18 yr of age and for the prevention and treatment of PONV in adults.

So, if neuroleptics and most serotonin antagonists cause QTc prolongation, even though its clinical relevance remains unclear, what are our antiemetic alternatives to choose from? Older drugs such as metoclopramide or promethazine must be reconsidered, but a thoroughly conducted meta-analysis has shown that the commercially available dosage of metoclopramide (10 mg) has little antiemetic efficacy and is probably underdosed. In fact, a study of more than 3000 patients showed that the minimum effective dose for the prevention of PONV is in the range of 25–50 mg i.v. with a frequency of extrapyramidal symptoms of less than 1%. However, even though the arrhythmia rate was only 0.3% and thus identical to placebo, a number of case reports suggest that metoclopramide too might lead to severe arrhythmias including cardiac arrest. Unfortunately, promethazine might not be any safer, given that it can lead to serious vascular necrosis which has resulted in tissue necroses requiring surgery from skin grafting to limb amputations. Therefore, we have previously advocated dexamethasone 4 mg as our first-line treatment for the prevention of PONV, since we have been able to show that it is equally effective as droperidol 1.25 mg or ondansetron 4 mg and we did not have an increased rate of side-effects. However, an increased rate of bleeding after tonsillectomy in children in the late postoperative period has been reported, so that at least in that specific population, a ‘universal safety’ can no longer be assumed for this drug either. Thus, although drug-induced side-effects of antiemetics are rather rare, they can be severe and life threatening in an individual patient. Given that the effectiveness of any antiemetic depends on the baseline risk (the same efficacy in terms of relative risk leads to a larger absolute risk reduction in high-risk patients), it makes sense to reserve antiemetic therapy for patients at moderate to high risk, or to consider alternative techniques that are free from drug-induced side-effects.

Non-pharmacological techniques such as acupuncture, acustimulation, and acupressure have been investigated as alternatives to antiemetics and as additional treatment modalities for PONV. Although the mechanisms of action of these techniques are still not well understood, stimulation of the Chinese ‘nei guan’ point P6 on the wrist by needle, electricity, or pressure seems to reduce nausea and vomiting. These non-pharmacological techniques have been reported in clinical trials to be effective measures in the prevention of PONV. The World Health Organization conducted an extensive review of controlled clinical trials of acupuncture therapy and published their data in 2002. In their report, ‘nausea and vomiting’ is listed as one of the ‘diseases, symptoms or conditions for which acupuncture has been proved—through controlled trials—to be an effective treatment’.
However, despite growing interest in acupuncture therapy among physicians, it does not seem to be standard practice yet. Practicing acupuncture requires understanding of traditional eastern medicine and special training for physicians. For example, in the USA, 220–300 h of expensive acupuncture training are required (requirements vary between states). Moreover, acupuncture can be time-consuming and labour intensive in the hospital setting, and acupuncture needle insertion sites can be limited by surgical wound or position. As an alternative to needles, acustimulation and acupressure have been utilized, and are relatively easy to incorporate into medical practice.

In 2004, a Cochrane review of 26 trials (n=3347) concluded that the use of P6 acupoint stimulation reduces the risk of PONV with minimal side-effects. Although the literature supports stimulation of P6 as an effective treatment for PONV, it is not commonly practiced. Is acustimulation just an under-recognized option to treat PONV that needs more recognition among health-care professionals and patients? What factors are preventing us from utilizing this technique? What is lacking in the current literature?

In this issue of the *British Journal of Anaesthesia*, Frey and colleagues have investigated acustimulation use for PONV in 200 patients who underwent gynaecological surgery and their results support the current evidence that P6 acustimulation reduces PONV. Furthermore, the authors sought to investigate whether the timing of acustimulation (pre-induction vs post-induction) and patient risk (assessed by the simplified Apfel score) influence efficacy. Interestingly, starting acustimulation before, compared with after, induction of anaesthesia was associated with a similar incidence of PONV. This appears to be in contrast with the findings that perioperative P6 stimulation was superior to preoperative P6 stimulation. The reason for this might be that Frey and colleagues used comparable stimulation after induction, whereas White and colleagues used P6 stimulation longer after the induction.

The authors also questioned whether the risk for PONV affects efficacy of P6 acustimulation. To that end, they classified patients into two risk groups, moderate risk (with two of the Apfel risk factors) or high risk (with three or four risk factors). In the high-risk group, the 24 h incidence of PONV was significantly reduced from 80% (40/50) to 54% (26/48) in the group with three risk factors, and from 91% (30/33) to 58% (19/33) in the group with four risk factors. However, in the moderate risk group, the incidence was 31% (5/16) without and 35% (7/20) with acustimulation. This suggests that P6 acustimulation may only be effective in patients at high but not at moderate risk. While this may well be the case, and these data are consistent with such a hypothesis, these data do not provide strong evidence nor proof for this conclusion since the subgroup of moderate risk is far too small and underpowered to detect a possible treatment effect. Of note, given the limited efficacy of most antiemetics to reduce PONV, most studies need sample sizes of at least 100 per group (or subgroup) to be able to demonstrate antiemetic efficacy. As an aside, the clinician is well advised to be careful with subgroup analyses in general because they are often used in data dredging to identify new findings that are later not reproducible. Irrespective of this, this study provides further evidence supporting P6 stimulation as an alternative or supplemental modality for preventing PONV in daily clinical practice without the risk for potentially serious drug-induced side-effects.

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