Pain intensity decreased 30 min after the block ($P = 0.017$, Supplemental Table 1, http://links.lww.com/EJA/A215). We found a statistically significant reduction in the pain area in the improved group ($P = 0.001$), but not in the nonimproved group ($P = 0.442$). The pain area did not differ between the improved and nonimproved groups before the block ($P = 0.341$) but was significantly lower in the improved group after the block ($P = 0.021$) (Supplemental Fig. 3, http://links.lww.com/EJA/A215). There was a statistically significant correlation between change in total pain area and change in pain intensity after the block (correlation coefficient $= 0.737$, $P = 0.002$) (Supplemental Fig. 4, http://links.lww.com/EJA/A215).

The current exploratory study found GON block reduced the area of pain at the innervation territory of the GON, but not at areas supplied by trigeminal nerves or other cervical nerves. This suggests that patients with pain predominantly located at GON territory are more likely to benefit and stimulate research on pain localisation as predictor of response to GON block. Reduction in pain areas was associated with patient report of feeling improved and highly correlated with pain relief. These findings support the clinical importance of pain area in headache. Mapping and quantifying pain areas can provide relevant information in outcome studies on headache.

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Improving perisurgical pain control

Ten Mistakes to be avoided

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Editor,

‘Pain is a more terrible lord of mankind than even death itself’ said the doctor and philosopher Albert Schweitzer, and nothing could be truer than that.

Postoperative pain is an undermanaged condition. Over the last two decades, there have been many studies showing that more than 70% of surgical patients reported moderate to severe pain in the days following surgery.1 These numbers are relevant, because despite significant developments in pain medicine, there is still room for improvement. What are we missing? Could this be about human factors? If yes, what kind of human factors? These questions must be addressed. There is evidence of efficacious drugs from many studies. In addition, there are many guidelines in this field. So, what else is needed to improve pain control in surgical patients?

Here, we present the results of a survey that was sent to 30 anaesthetists from one of three main hospitals of Oradea in Romania. They were asked to write down 10 mistakes in the praxis of peri-operative analgesia with which they had been confronted. We received 19 answers, ranking the 10 major mistakes in the order of prevalence. We present these answers from the least to the most significant.

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Answer 10. There are deficiencies in the assessment of pain. A careful history and a complete physical examination should be supported by the use of validated assessment tools for pain, sleep, function and mood. Often, staff members assess pain without referring to its dynamic process and most of the time, practitioners are omitting surveying pain on movement, that should be used to prescribe breakthrough analgesia.

Answer 9. There are wrong beliefs about pain. One of the interviewed doctors gave an example from his daily practice: ‘In the hospital where I am working, I heard one of the nurses telling the patient: ‘It’s normal to experience that pain considering what surgery you had’. To note that the patient had a hernia repair!’ This is not acceptable. There are other wrong beliefs we might face, like ‘pain is useful to diagnose the acute abdomen or to point out progression throughout condition’.

Answer 8. Pain outside the surgical site may be missed or triggers may be ignored. Precautions of safety have to be taken when transferring unconscious patients. There is a high incidence of peripheral nerve injuries during anaesthesia, representing 12% of general anaesthesia malpractice claims since 1990. Peripheral nerve injuries are preventable.

Answer 7. The patient’s sleep deprivation is overlooked. Sleep deprivation increases the experience of pain, interfering with treatments involving opioidergic and serotonergic mechanisms of action. More recently it has been shown that sleep deprivation may amplify pain reactivity within the primary cortex and may blunt pain reactivity decisions in the striatum and insula. Thus, sleep deprivation is involved in central sensitisation, basically turning up the intensity of pain. Consequently, insomnia should not be ignored.

Answer 6. The patient’s emotional and psychological support is overlooked. The importance of empathy was recognised back in ancient times when Hippocrates said: ‘Cure sometimes, treat often, comfort always!’ ‘Talk and listen to your patient! Offer patients the feeling that they are well understood and you care about them!'

Answer 5. Consider adjuvant medication. It is well known that adjuvant drugs may reduce acute perisurgical pain while limiting opioid consumption and opioid-related adverse effects. In addition, nonopioid analgesics may decrease the risk of neuropathic pain.

Answer 4. Do not overuse opioids. There is not yet an opioids crisis in Europe. But we have to take an active role to prevent such a crisis. Various studies have looked into how many patients continue to take opioids after surgery. For example, of almost 400,000 patients undergoing low-risk procedures, 7% continued to take opioids 12 months postoperatively. It remains unknown how many of those were already on chronic opioid analgesia before surgery. In a recent large-scale study, one million opioid-naive patients undergoing surgery were followed up and it was found that 0.6% had developed misuse, leading to opioid dependence. The risk of misuse was increased by repeated prescriptions, each additional week of prescription increasing the risk by 20%. However, the risk of misuse was not affected by the dose prescribed.

Answer 3. Traditional practices are maintained despite evidence-based guidelines. Despite the presence of multiple evidence-based guidelines on analgesia, there still remain inconsistencies in how patients are treated. Greater adherence to protocols and guidelines is needed as they have shown real benefits in decreasing morbidity and the length of hospital stay and in increased quality of life.

Answer 2. Medication errors must be avoided. We are all vulnerable to medication errors. In one survey, 91.8% of interviewed anaesthetists reported they had committed administration medication errors in the past. In 87% of the cases, the errors were immediately identified and corrected, but in 1.8%, consequences of the errors were morbidity and irreversible damage.

Answer 1. Patients should be involved in defining realistic goals for pain control. Peri-operative pain evaluation is needed to correct any underlying misperceptions concerning pain and analgesics. It is important to reconsider diagnoses, to discuss alternative options, to treat physical and emotional elements and finally to tailor pain management to each individual patient.

In summary, it is important that clinicians consider their patients’ pain in the context of biological, social and psychological factors. This concept has been known as a biopsychosocial model for pain control. Analgesia strategies should be multimodal within a multidimensional system. Anaesthesia and analgesia is a holistic discipline, where the clinician should perform as a provider of common sense ensuring a continuous connection between medicine, practice and philosophy.

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Functional recovery after knee arthroplasty with regional analgesia

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Editor,

We read with interest the systematic review and meta-analysis of randomised controlled trials assessing functional recovery after knee arthroplasty performed by Osinski et al.1 Most relevant studies have assessed postoperative complication rate, hospital length of stay and readmission rate. However, these outcomes do not necessarily define recovery from the patients’ point of view, which is return to pre-operative functional level. Therefore, previous studies have not assessed the overall clinically important functional outcomes.2 Osinski et al. assessed the influence of regional analgesia on range of motion, in addition to other outcomes measures. The authors conclude ‘we can confirm with confidence that all regional analgesia techniques are superior to systemic analgesia in terms of the range of movement achieved in the early postoperative period’. However, such confidence may be misplaced because the studies included in the analysis had significant variability in peri-operative care. For example, there was variability in the anaesthetic and analgesic regimen [type of regional analgesic technique – epidural analgesia, peripheral nerve blocks (femoral nerve block, sciatic nerve block, adductor canal block), local infiltration analgesia or peri-articular infiltration technique (e.g. variable local anaesthetic drug, volume, approach to infiltration, use of cocktails etc.) and the use of nonopioid analgesics (e.g. paracetamol, NSAIDs or cyclooxygenase-2-specific inhibitors, gabapentinoids etc.)]. Also, it is possible that there was variability in the physical therapy protocols, which may have influenced functional recovery. In addition, surgical technique and postoperative care were not described in detail, thereby limiting interpretation.3

Importantly, the studies included in the meta-analysis spanned a wide time period (1990 to 2015) during which there has been a significant change in the peri-operative care of patients undergoing knee arthroplasty including the introduction of ‘enhanced recovery after surgery’ principles that has allowed significant reduction in hospital length of stay.4,5 Hospital length of stay in the earlier studies was 16 to 21 days, while the current standard is 1 to 4 days.6 In fact, knee arthroplasty is increasingly being performed on an outpatient basis with excellent safety data. Finally, the studies included in the meta-analysis by Osinski et al. had inconsistent and insufficient quality of data, particularly for hospital length of stay and range of motion (primary outcome measures for this study), which required the authors to downgrade the quality of evidence.

In summary, systematic reviews and meta-analyses based upon randomised controlled trials can help clinicians in decision-making. The authors have to be congratulated for undertaking a significant effort to review the evidence for functional recovery after knee arthroplasty. However, the peri-operative period is complex and thus there is a need for critical analysis of the present evidence for optimal care versus that repeated in previous studies. The authors have not taken into consideration the above-mentioned variabilities in the included studies. None of the studies included in their analyses utilised enhanced recovery care principles, and thus the conclusions of this meta-analysis may not reflect functional recovery after knee arthroplasty nor the specific role of regional analgesia in the current clinical practice.2 Consequently, this meta-analysis could have benefited from a critical analysis of the diverse clinical practice in the included studies as well as only inclusion of studies in which the hospital length of stay was 1 to 4 days.

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