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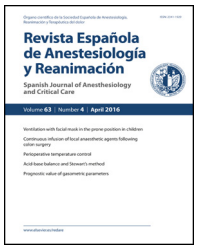

CONTINUING EDUCATION

Multimodal analgesia and regional anaesthesia☆,☆☆

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Abstract Multimodal analgesia provides quality analgesia, with fewer side effects due to the use of combined analgesics or analgesic techniques. Regional anaesthesia plays a fundamental role in achieving this goal.

The different techniques of regional anaesthesia that include both peripheral and central blocks in either a single dose or in continuous infusion help to modulate the nociceptive stimuli that access the central level. The emergence of the ultrasound as an effective system to perform regional anaesthesia techniques has allowed the development of new regional anaesthesia techniques that formerly could not be carried out since only neurostimulation or skin references were used.

It is essential to take into account that even with effective blocking it is advisable to associate other drugs by other routes, in this way we will be able to reduce the required doses individually and attempt to achieve a synergistic, not purely additive, effect.

PALABRAS CLAVE
Analgesia multimodal;
Anestesia regional;
Postoperatorio;
Ecografía;
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Analgesia multimodal y anestesia regional

Resumen La analgesia multimodal permite conseguir una analgesia de calidad y con menos efectos secundarios gracias al uso de diferentes analgésicos o técnicas analgésicas. La anestesia regional juega un papel fundamental para conseguir este objetivo.

Las diferentes técnicas de anestesia regional, que incluyen tanto los bloqueos periféricos como centrales, bien en dosis única, bien en perfusión continua, contribuyen a modular los estímulos nociceptivos que acceden a nivel central. La irrupción de los ultrasonidos como

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sistema efectivo para realizar las técnicas de anestesia regional ha permitido el desarrollo de nuevas técnicas de anestesia regional que antiguamente no podían realizarse al utilizar únicamente la neuroestimulación o las referencias cutáneas. Es fundamental tener en cuenta que aun teniendo un bloqueo efectivo es recomendable asociar otros fármacos por otras vías, de esta manera conseguiremos disminuir las dosis requeridas de forma individual e intentaremos incluso que el efecto sea sinérgico y no tan solo aditivo.

Introduction

The aim of multimodal analgesia or balanced analgesia is to use the additive and synergistic effect of various analgesics at low doses to achieve adequate control of postoperative pain while reducing the side effects of the drugs used. The use of regional techniques for postoperative pain management is a key component of multimodal analgesia.[1,2]

The implementation of multimodal recovery programmes that bring together all the professionals involved in the surgical process has significantly improved the quality of life of patients. Postoperative rehabilitation protocols, in which regional anaesthesia plays an important role, have shown significant analgesic benefit, reduced the incidence nausea and vomiting, enabled faster recovery of intestinal transit, and result in fewer complications and shorter hospital stays.

The key is to limit the input of nociceptive impulses to the central nervous system (CNS), which is achieved in some surgeries with epidural catheters or peripheral nerve blocks, or even with local infiltration anaesthesia techniques.[3]

Aggressive, early strategies should be implemented to control postoperative pain, since the severity of acute postoperative pain has been correlated with the risk of developing persistent chronic pain.[4]

Regional anaesthesia is an increasingly common technique. The introduction of ultrasound-guidance has facilitated administration and improved the success rate of these techniques, making them a useful tool for quality multimodal anaesthesia.[5]

The use of ultrasound in the administration of regional anaesthesia has led to the development of many new nerve blocks, and surgeries that were hitherto performed exclusively using central neuraxial blocks for postoperative pain control can now be performed using ultrasound-guided peripheral nerve blocks. This has dramatically changed postoperative analgesic follow-up in procedures such as breast surgery, for which the new peripheral PEC I, PEC II and BRILMA nerve blocks were developed.

The keys to multimodal anaesthesia

The multimodal approach, as discussed in the introduction, involves acting on various points along the pain pathway.

The aim is to combine different drugs with various mechanisms and pathways of action using different routes of administration, thus achieving adequate analgesia at lower doses. This in turn reduces the side effects of each drug administered, which improves the quality of postoperative analgesia and with it, patient comfort.

The drug combination may be either additive, when the analgesic outcome is equivalent to the sum of the effect of each individual drug, or synergistic, when the effect achieved is greater than the sum of the parts. Our goal is to achieve a synergistic effect by combing different drugs and various routes of administration.

The use of regional techniques for postoperative pain management is a key component of multimodal analgesia. These techniques, which include both peripheral and central blocks, have shown that reducing nociceptive input to the CNS attenuates the endocrine stress response and the pro-inflammatory response, reduces respiratory function inhibition, improves coronary perfusion, increases intestinal motility, improves tissue perfusion and reduces insulin resistance.[6]

Furthermore, locoregional techniques combined with multimodal analgesia (anti-inflammatories, neuromodulators) may reduce the risk of developing chronic pain.[7]

Better results with multimodal anaesthesia

The good clinical practice guidelines of various scientific societies recommend using a combination of non-opioid analgesics and/or locoregional anaesthesia techniques for multimodal analgesia. This is a strong recommendation for many procedures, for example colorectal surgery, based on high quality evidence.[8]

In their systematic review of studies on the potential advantages of regional anaesthesia published in the last 10 years, Kessler et al.[9] conclude that analgesia that includes a regional anaesthesia technique will reduce postoperative pain, decrease opioid consumption, and increase patient satisfaction.

Various studies comparing surgery using a particular regional anaesthesia technique (for example, thoracic epidural anaesthesia in patients undergoing laparotomy) with patient-controlled analgesia have shown that the former is associated with fewer side effects and a speedier recover, and thus reduces the length of hospital stay.[10]

Different randomised studies[11,12] in multimodal analgesia combining different drugs with one or more routes of administration (for example, systemic and neuraxial) have concluded that the combination of various analgesic techniques is superior to single-route analgesia administration in terms of improved pain relief and less consumption of opioids.

According to the latest recommendations from the American Pain Society, the use of regional anaesthesia techniques