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SCIENTIFIC ARTICLE

Intravenous lidocaine for postmastectomy pain treatment: randomized, blind, placebo controlled clinical trial

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KEYWORDS
Postoperative pain;
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Abstract
Background and objective: Postoperative pain treatment in mastectomy remains a major challenge despite the multimodal approach. The aim of this study was to investigate the analgesic effect of intravenous lidocaine in patients undergoing mastectomy, as well as the postoperative consumption of opioids.
Methods: After approval by the Human Research Ethics Committee of the Instituto de Medicina Integral Prof. Fernando Figueira in Recife, Pernambuco, a randomized, blind, controlled trial was conducted with intravenous lidocaine at a dose of 3 mg/kg infused over 1 h in 45 women undergoing mastectomy under general anesthesia. One patient from placebo group was.
Results: Groups were similar in age, body mass index, type of surgery, and postoperative need for opioids. Two of 22 patients in lidocaine group and three of 22 patients in placebo group requested opioid ($p = 0.50$). Pain on awakening was identified in 4/22 of lidocaine group and 5/22 of placebo group ($p = 0.50$); in the post-anesthetic recovery room in 14/22 and 12/22 ($p = 0.37$) of lidocaine and placebo groups, respectively. Pain evaluation 24 h after surgery showed that 2/22 and 3/22 patients ($p = 0.50$) of lidocaine and placebo groups, respectively, complained of pain.
Conclusion: Intravenous lidocaine at a dose of 3 mg/kg administered over a period of an hour during mastectomy did not promote additional analgesia compared to placebo in the first 24 h, and has not decreased opioid consumption. However, a beneficial effect of intravenous lidocaine in selected and/or other therapeutic regimens patients cannot be ruled out.

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PALAVRAS-CHAVE
Dor pós-operatória;
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Anestésico local;
Dor;
Lidocaína intravenosa

Lidocaína intravenosa no tratamento da dor pós-mastectomia: ensaio clínico aleatório encoberto placebo controlado

Resumo
Justificativa e objetivo: O tratamento da dor pós-operatória em mastectomia continua sendo um grande desafio apesar da abordagem multimodal. O objetivo deste estudo foi investigar o efeito analgésico da lidocaína intravenosa em pacientes submetidas a mastectomia, como também, o consumo de opioide pós-operatório.
Métodos: Após aprovação pelo comitê de ética e pesquisa em seres humanos do Instituto de Medicina Integral Prof. Fernando Figueira em Recife - Pernambuco foi realizado ensaio clínico aleatório encoberto placebo controlado com lidocaína intravenosa na dose de 3 mg/kg infundida em uma hora, em 45 mulheres submetidas a mastectomia sob anestesia geral. Excluída uma paciente do grupo placebo.
Resultados: Os grupos foram semelhantes quanto à idade, índice de massa corpórea, tipo de intervenção cirúrgica e necessidade de opioide no pós-operatório. Solicitaram opioide 2/22 pacientes nos grupos da lidocaína e 3/22 placebo (p = 0,50). Identificada a dor ao despertar em 4/22 no grupo lidocaína e 5/22 (p = 0,50) no grupo placebo; na sala de recuperação pós-anestésica em 14/22 e 12/22 (p = 0,37) nos grupos lidocaína e placebo respectivamente. Ao avaliar a dor 24 horas após o procedimento cirúrgico 3/22 e 2/22 (p = 0,50) das pacientes relataram dor em ambos os grupos respectivamente.
Conclusão: A lidocaína intravenosa na dose de 3mg/kg administrada em um período de uma hora no transoperatório de mastectomia não promoveu analgesia adicional em relação ao grupo placebo nas primeiras 24 horas e não diminuiu o consumo de opioide. Contudo, um efeito benéfico da lidocaína intravenosa em pacientes selecionadas e/ou em outros regimes terapêuticos não pode ser descartado.

Introduction

Postoperative pain remains inadequately treated despite its predictability and progress of various analgesic techniques and drugs available for its control.[1] Some authors report that, regardless of the type of surgical procedure, postoperative pain is present and with varying intensity.[2–4] The incidence of postoperative pain in breast cancer is low when treated properly,[5] however, it can result in cardiovascular and respiratory complications, as well as persistent postoperative pain.[6] Therefore, adequate pain control is of paramount importance in clinical practice.

In this context, the multimodal approach to postoperative pain should be considered, given the analgesic results obtained with each particular drug and the lower incidence of adverse effects.[6,7]

In order to provide postoperative analgesia, intravenous lidocaine has been used intra- and post-operatively as part of multimodal approach,[8] with proven analgesic effect in postoperative abdominal[9] and pelvic surgery, such as colectomy[10] and prostatectomy,[11] respectively.

In addition to the analgesic action, local anesthetics have anti-inflammatory action,[11] justifying the use of intravenous lidocaine to modulate the inflammatory response resulting from postoperative pain.[12] Other benefits are the reduced need for postoperative opioids,[8,10] reduced complications such as nausea and vomiting, and reduced pain intensity in the first 24 h.[10]

Meta-analyses[9,13] show conflicting results regarding the analgesic effect of lidocaine on postoperative pain, highlighting the need to specify the real value of intravenous lidocaine for postoperative pain relief in patients undergoing mastectomy. The objective of this study was to investigate the analgesic effect of intravenous lidocaine in the first 24 h in women undergoing mastectomy, as well as to assess the consumption of opioids postoperatively.

Methods

After approval by the Human Research Ethics Committee of the Integrative Medicine Institute Prof. Fernando Figueira (IMIP), under number 2026 CAAE 0202009917210, and obtaining written informed consent from participants, a randomized, placebo controlled, blind clinical trial was performed from July 2011 to August 2012, at the IMIP, Recife, Pernambuco, Brazil.

The study included women aged between 18 and 75 years who underwent mastectomy for breast cancer treatment. Exclusion criteria were patients with relative or absolute contraindication to the use of lidocaine (allergy to local anesthetics, changes in atrioventricular conduction, uncontrolled epilepsy, porphyria, and malignant hyperthermia), those receiving antidepressants and/or anticonvulsants, with cardiac arrhythmia and any type of rheumatic disease, distant metastasis or in contralateral breast, patients who