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GASTROENTEROLOGÍA  
DE MÉXICO

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ORIGINAL ARTICLE

## Topical diltiazem for pain after closed hemorrhoidectomy<sup>☆</sup>



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Received 8 September 2015; accepted 4 February 2016

Available online 12 April 2016

### KEYWORDS

Diltiazem;  
Topical;  
Postoperative pain;  
Hemorrhoidectomy

### Abstract

**Background:** Anal sphincter spasm contributes to the appearance of postoperative pain following hemorrhoidectomy.

**Aim:** To determine the efficacy of topical diltiazem in the control of post-hemorrhoidectomy pain.

**Material and methods:** A randomized, prospective, experimental, double-blind study was conducted on 2 groups of patients in the postoperative period of closed hemorrhoidectomy. Each group consisted of 17 patients. Group A received topical diltiazem in the anal region 3 times a day and group B received a placebo. Ketorolac was administered to both groups as rescue therapy.

**Results:** In group A, the mean score on the visual analog scale was  $2.97 \pm 1.18$  cm at 24 h,  $1.51 \pm 1.18$  cm at 48 h, and  $0.84 \pm 0.92$  cm at 72 h. In group B, it was  $6.82 \pm 1.9$  cm at 24 h,  $5.3 \pm 1.66$  cm at 48 h, and  $4.32 \pm 2.13$  cm at 72 h ( $P < .001$ , 95% CI).

The mean number of analgesic doses in group A was  $2.41 \pm 0.87$  at 24 h,  $1.11 \pm 0.85$  at 48 h, and  $0.94 \pm 0.96$  at 72 h. In group B, it was  $3.82 \pm 0.52$  at 24 h,  $3.64 \pm 0.70$  at 48 h, and  $2.88 \pm 1.26$  at 72 h ( $P < .001$ , 95% CI).

<sup>☆</sup> Please cite this article as: Rodríguez-Wong U, Ocharán-Hernández ME, Toscano-Garibay J. Diltiazem tópico en el dolor postoperatorio de hemorroidectomía con técnica cerrada. Revista de Gastroenterología de México. 2016;82:74–79.

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**PALABRAS CLAVE**

Diltiazem;  
Tópico;  
Dolor postoperatorio;  
Hemorroidectomía

**Conclusiones:** In this study, topical administration of diltiazem resulted in a statistically significant reduction of postoperative pain in patients that underwent closed hemorrhoidectomy. © 2016 Asociación Mexicana de Gastroenterología. Published by Masson Doyma México S.A. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

**Diltiazem tópico en el dolor postoperatorio de hemorroidectomía con técnica cerrada****Resumen**

**Antecedentes:** El espasmo del esfínter anal contribuye a la aparición del dolor postoperatorio después de una hemorroidectomía.

**Objetivo:** Determinar la eficacia del diltiazem tópico en el control del dolor postoperatorio de hemorroidectomía.

**Material y métodos:** Se realizó un estudio aleatorizado, prospectivo, experimental, doble ciego, en 2 grupos de pacientes en el postoperatorio de hemorroidectomía con técnica cerrada. Cada grupo incluyó a 17 pacientes, el grupo A recibió diltiazem tópico en la región anal 3 veces al día y el grupo B recibió un placebo. En ambos grupos se administró ketorolaco por vía oral como terapia de rescate.

**Resultados:** En el grupo A el promedio de calificación de la escala análoga visual fue de  $2.97 \pm 1.18$  cm a las 24 h,  $1.51 \pm 1.18$  cm a las 48 h y  $0.84 \pm 0.92$  cm a las 72 h. En el grupo B fue de  $6.82 \pm 1.9$  cm a las 24 h,  $5.3 \pm 1.66$  cm a las 48 h y  $4.32 \pm 2.13$  cm a las 72 h ( $p < 0.001$ , IC del 95%).

El promedio de número de dosis de analgésico en el grupo A fue de  $2.41 \pm 0.87$  a las 24 h,  $1.11 \pm 0.85$  a las 48 h y  $0.94 \pm 0.96$  a las 72 h. En el grupo B fue de  $3.82 \pm 0.52$  dosis a las 24 h,  $3.64 \pm 0.70$  dosis a las 48 h y  $2.88 \pm 1.26$  a las 72 h ( $p < 0.001$ , IC del 95%).

**Conclusiones:** En este estudio, el diltiazem administrado por vía tópica disminuyó el dolor, en los pacientes postoperados de hemorroidectomía con técnica cerrada, de manera estadísticamente significativa.

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**Introduction**

Seventy-seven percent of patients are estimated to present with pain after a surgical procedure and of those, 80% refer to it as moderate-to-severe intensity.<sup>1</sup> The pain associated with the surgical treatment of hemorrhoidal disease is not considered a complication of this procedure in itself, but it is the main reason why patients with hemorrhoidal disease avoid treatment.<sup>2</sup>

For the purpose of reducing pain in the treatment of hemorrhoidal disease, attempts have been made to improve the surgical techniques, analgesic procedures, and general postoperative management measures.<sup>3</sup>

In virtue of the fact that anal sphincter spasm could play an important role in the appearance of postoperative pain after hemorrhoidectomy, partial anal sphincter sphincterotomy has been suggested as an alternative for reducing this pain.<sup>4</sup> Even though some authors state that there are no significant differences in relation to anal sphincter continence, when sphincterotomy is added during hemorrhoidectomy, the risk for anal incontinence in these patients is high. Therefore, sphincterotomy is not recommended in the postoperative period of hemorrhoidectomy, unless there is an associated anal fissure.<sup>2</sup> In an effort to prevent this

complication, some topical medications, such as nitroglycerine, botulinum toxin, and diltiazem (DTZ), have been used to relax the anal sphincter and reduce pain.<sup>5</sup>

The aim of this work was to determine the efficacy of topical diltiazem in the control of post-hemorrhoidectomy pain.

**Methods**

A simple, randomized, experimental, prospective, longitudinal, and double-blind study was conducted. All 34 patients that underwent the Ferguson closed hemorrhoidectomy for grade III and grade IV hemorrhoidal disease were operated on by the same surgeon. The patients were randomly divided into 2 groups of 17 patients each.

The inclusion criteria were: patients with grade III and grade IV hemorrhoidal disease and mixed hemorrhoidal disease that were surgically treated through closed hemorrhoidectomy.

The non-inclusion criteria were: patients under treatment with calcium channel blocking agents, patients that complained of previous collateral effects with the use of calcium channel blockers, and patients with a history

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