

Comparison of Effectiveness of Topical and Oral Metronidazole for Reducing Postoperative Pain after Hemorrhoidectomy

Sajid Razzaq¹, Zardad Khan², Mohammad Arif Mahmood¹, Mohammad Nadeem Khan³, Waheed Iqbal⁴ and Nasir Zareen¹

ABSTRACT

Objective: To compare the effectiveness of oral versus topical metronidazole for reducing postoperative pain in patients undergoing Milligan Morgan hemorrhoidectomy.

Study Design: Randomized controlled trial study.

Place and Duration of Study: This study was conducted at the Department of Surgery, Divisional Headquarter Teaching Hospital Mirpur AJK from July 2019 to June 2020.

Materials and Methods: One hundred and twenty patients of both genders with ages 20 to 60 years undergoing hemorrhoidectomy for 3rd and 4th degree hemorrhoids were enrolled. All the patients were equally divided into two groups, each group contains 60 patients. Group 1 received oral metronidazole postoperatively for 5-days and group 2 received topical metronidazole postoperatively. Postoperative pain was analyzed by VAS on 1st, 3rd and 5th day postoperatively between both groups.

Results: There were 76 (63.33%) male patients and 44 (36.67%) were females with mean age 38.74±11.42 years. 67 (55.83%) patients had 4th degree hemorrhoidal disease and 53 (44.16%) patients had 3rd degree disease. Group 2 (topical) patients had significantly lower postoperative pain at 5th day as compared to group 1 (oral) patients with p value < 0.05.

Conclusion: Topical metronidazole is more effective than oral metronidazole in patients undergoing Milligan Morgan hemorrhoidectomy.

Key Words: MilliganpMorgan hemorrhoidectomy, Post-operative pain

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INTRODUCTION

Hemorrhoids at 3, 7, and 11 O'clock are symptomatic and prolapsed anal coilings. Among them are secondary haemorrhoids. Patients suffer from fresh rectal bleeding, mucus release, rectal pain irritation, and swelling. Hemorrhoids are four degrees. In the first grade there is no prolapse bleeding per rectum, in the second grade there is spontaneous prolapse, manual haemorrhoids of the third grade and no reduction of the entire prolapse of the fourth grade.¹⁻³

¹. Department of Surgery, SKBZ/Poonch Medical College Rawalakot AK.

². Department of Surgery / Anaesthesiology³ / Medicine⁴, Divisional Headquarter Teaching Hospital /MBBS Medical College Mirpur AK.

Correspondence: Dr. Zardad Khan, Assistant Professor of Surgery, Divisional Headquarter Teaching Hospital /MBBS Medical College Mirpur, AK.

Contact No: 03335202466

Email: surgeon.zardad@gmail.com

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The key indications in clinical practise are third or fourth-grade internal haemorrhoids⁴; pain, infections, infection, inflammations, haemorrhage, faecal incontinence, unexposed wounds and urinary retention are the major complications in hemorrhoidectomy.^{5,6} Spasms of internal anal sphincter appears as the major indicator of hemorrhoidectomy.⁵ Dolor is the main post-operative problem and it is caused by surgical injury in sensitive anoderm, oedema, spasm, and infection.⁷ Some remedial options such as GTN 0.1%, topical NSAIDs, calcium channel blockers and metronidazole have been suggested.⁸ Studies show that metronidazole substantially decreases postoperative pain (p0.004, p0.0011) in all types (topical and oral) and enhances the healing process relative to placebo.^{9,10} The present study was conducted aimed to compare the efficacy of oral metronidazole versus topical metronidazole for reducing postoperative pain in patients undergoing hemorrhoidectomy.

MATERIALS AND METHODS

This randomized controlled trial was conducted at Department of Surgery, Divisional Headquarter Teaching Hospital Mirpur AK from 1st July 2019 to 30th June 2020. A total of 120 patients of both genders with

ages 20 to 60 years were enrolled in this study. Patient's detailed demographics including age, sex, and body mass index were recorded. Patients with emergency hemorrhoidectomy, diabetic patients, patients with renal failure and non-compliance patients were excluded. All the patients were received elective Milligan-Morgan hemorrhoidectomy under general anesthesia. Patients were divided into two groups 1 and 2, each group contains 60 patients. Group 1 received oral metronidazole postoperatively for 5-days and group 2 received topical metronidazole postoperatively. Postoperative pain was analyzed by VAS on 1st, 3rd and 5th day postoperatively between both groups. Data was analyzed by SPSS 24.

RESULTS

Seventy-six (63.33%) were male patients and 44 (36.67%) were females with mean age 38.74 ± 11.42 years. Mean BMI of patients was 24.52 ± 2.86 kg/m². 67 (55.83%) patients had 4th degree hemorrhoidal disease and 53 (44.16%) patients had 3rd degree disease (Table 1). At first postoperative day, mean pain score in group 1 was 6.89 ± 1.76 and in group 2 it was 6.42 ± 1.38 , no significant difference was observed at first postoperative day. At 3rd postoperative day, mean pain score in group 1 was 3.96 ± 1.28 and in group 2 it was 2.74 ± 1.06 , a significant difference was observed between two groups with p value 0.024. At 5th postoperative day, mean score in group 1 was 3.08 ± 0.24 and in group 2 it was 2.14 ± 0.26 , a significant difference was observed between both groups with p value 0.01 (Table 2).

Table No.1: Details of enrolled patients

Variable	No.	%
Mean age (years)	38.74 ± 11.42	
Mean BMI (Kg/m)	24.52 ± 2.86	
Gender		
Male	76	63.33
Female	44	36.67
Hemorrhoid degree		
3 rd	53	44.16
4 th	67	55.83

Table No.2: Comparison of postoperative pain score between both groups

Variables	Group 1	Group 2	P-value
At 1st postoperative day	6.89 ± 1.76	6.42 ± 1.38	>0.05
At 3rd postoperative day	3.96 ± 1.28	2.74 ± 1.06	0.024
At 5th postoperative day	3.08 ± 0.24	2.14 ± 0.26	0.01

DISCUSSION

Post-operative pain control is the most critical problem after hemorrhoidectomy. This pain tends to be multifactorial and depends on individual tolerance, mode of anaesthesia and surgical technique. Besides the

spasm of an anal sphincter, the two main causes are after surgical discomfort. Majority of patients were male 76 (63.33) as compared to females 44 (36.67). Results of this study showed similarity to many other previous studies in which population of male patients was high 55% to 70% as compared to females and average age of patients was 40years.^{11,12}

In this study, we found 67 (55.83%) patients had 4th degree hemorrhoidal disease and 53 (44.16%) patients had 3rd degree disease. A study conducted by Hyder et al¹³ reported that 59.67% patients had 3rd degree and 40.32% had 4th degree hemorrhoidal disease. We found that, at first postoperative day, mean pain score in group 1 was 6.89 ± 1.76 and in group 2 it was 6.42 ± 1.38 , no significant difference was observed at first postoperative day. The study by Neogi et al¹⁴ indicates that metronidazole (oral and topical) significantly reduces postoperative pain but showed no difference in between oral and topical metronidazole. At 3rd postoperative day, mean pain score in group 1 was 3.96 ± 1.28 and in group 2 it was 2.74 ± 1.06 , a significant difference was observed between two groups with p value 0.024. These results showed similarity to previous study, conducted by Ala et al.¹⁵ At 5th postoperative day, mean score in group 1 was 3.08 ± 0.24 and in group 2 it was 2.14 ± 0.26 , a significant difference was observed between both groups with p value 0.01. These results were similar to Grekova et al.¹⁶ A study conducted by Elton et al¹⁷ reported topical glyceryl trinitrate for pain after haemorrhoidectomy. We found that group 2 topical metronidazole patients had lower postoperative pain as compared to oral metronidazole patients, showed similarity to other previous studies.¹⁸⁻²⁰

CONCLUSION

Topical metronidazole is more effective than oral metronidazole in patients undergoing Milligan Morgan hemorrhoidectomy.

Author's Contribution:

Concept & Design of Study: Sajid Razzaq
 Drafting: Zardad Khan, Mohammad Arif Mahmood
 Data Analysis: Mohammad Nadeem Khan, Waheed Iqbal and Nasir Zareen
 Revisiting Critically: Sajid Razzaq
 Final Approval of version: Sajid Razzaq

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Peter L, Karan N. The anus and anal canal. In: Williams NS, Bulstrode CJK, O'Connell PR,

- editors. Baily & love's Short practice of surgery. 26th edition. UK: Hotter Arnold;2013.p. 1250-1257.
2. Farquharson M, Hollingshead J, Moran B, editors. Farquharson's textbook of operative general surgery. CRC Press;2014.p.440-441.
 3. Taviloglu K. Anorectal emergencies. Acute Care Surgery Handbook. Springer, Cham; 2017.p. 133-147.
 4. Lohsiriwat V. Hemorrhoids: From basic pathophysiology to clinical management. World J Gastroenterol 2012;18: 2009-17.
 5. Keshtkaran A, Hosseini SV, Mohammadinia L. Short-term complications of hemorrhoidectomy in outpatient and inpatient operations in Shiraz, Southern Iran. Iran Red Crescent Med J 2011;13: 267-71.
 6. Holzheimer RG. Hemorrhoidectomy: Indications and risks. Eur J Med Res 2004; 9: 18-36.
 7. Haas E, Onel E, Miller H, Ragupathi M, White PF. A double-blind, randomized, active-controlled study for post-hemorrhoidectomy pain management with liposome bupivacaine, a novel local analgesic formulation. Am Surg 2012;78: 574-81.
 8. Bouchard D1, Abramowitz L, Castinel A, Suduca JM, Staumont G, Soudan D, et al. One-year outcome of haemorrhoidectomy. Dis Colon Rectum 2013;15(6):719-26.
 9. Gonzalez-Ojeda A, Rendon-Felix J, Garcia-Renteria J, Chavez-Tostado M. Efficacy of metronidazole versus placebo in pain control after hemorrhoidectomy: results of a controlled clinical trial. Revista Espanola de Enfermedades Digestivas 2015;(107/11):681-5.
 10. Ala S, Saeedi M, Eshghi F, Rafati M, Hejazi V, Hadianamrei R. Efficacy of 10% sucralfate ointment in the reduction of acute postoperative pain after open hemorrhoidectomy: a prospective, double-blind, randomized, placebo controlled trial. World J Surg 2013;37(1):233-8.
 11. Belfour L, Stojkovic SG, Botterill ID, Burke DA, Finan P, Sagar PM. A randomized double-blind trial of the effect of metronidazole on pain after closed hemorrhoidectomy. Dis Colon Rectum 2002;45:1186-92.
 12. Wanis KN, Emmerton-Coughlin HM, Coughlin S, Foley N, Vinden C. Systemic metronidazole may not reduce posthemorrhoidectomy pain: a meta-analysis of randomized controlled trials. To compare the frequency of healed wound in patients with hemorrhoids after Milligan-Morgan haemorrhoidectomy given 0.2% topical glyceryl trinitrate (GTN) versus placebo: Pak J Surg 2016; 32(4):234-238. 2017;60(4):446-455.
 13. Hyder Z, Ghansham, Shah SH, Zohaib ullah SO. To compare the frequency of healed wound in patients with hemorrhoids after Milligan-Morgan haemorrhoidectomy given 0.2% topical glyceryl trinitrate (GTN) versus placebo: Pak J Surg 2016; 32(4):234-238.
 14. Neogi P, Sinha A, Singh M. Is metronidazole a panacea for post hemorrhoidectomy pain? Int Surg J 2018; 5(11):3598- 3601.
 15. Ala S, Saeedi M, Eshghi F, et al. Topical Metronidazole can Reduce Pain after Surgery and Pain on Defecation in Postoperative Hemorrhoidectomy. Dis Colon Rectum 2008;51:235-8.
 16. Grekova NM, Maleva EA, Lebedeva Y, Bordunovsky VN, Telesheva LF, Bychkovskikh VA. The effects of topical application of metronidazole for treatment of chronic anal fissure: A randomized, controlled pilot study. Indian J Gastroenterol 2015;34(2):152-7.
 17. Elton C, Sen P, Montgomery AC. Initial study to assess the effects of topical glyceryl trinitrate for pain after haemorrhoidectomy. Int J Surg Investig 2001;2(5):353-7.
 18. Pourghassem J, Mahoori A, Akbari P. The effects of topical metronidazole on post-hemorrhoidectomy pain. Uni Med J 2012;69(10):651-5
 19. Liu JW, Lin CC, Kiu KT, Wang CY, Tam KW. Effect of glyceryl trinitrate ointment on pain control after hemorrhoidectomy: a meta-analysis of randomized controlled trials. World J Surg 2016;40(1):215-24.
 20. Ypsilantis E, Carapeti E, Chan S. The use of topical 10% metronidazole in the treatment of non-healing pilonidal sinus wounds after surgery. Int J Colorectal Dis 2016;31(3):765-7.