



## MANAGEMENT OF PAIN IN HEMORRHOIDECTOMY PATIENTS USING METRONIDAZOLE AND ANALGESIC DRUGS

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### ABSTRACT

Excisional hemorrhoidectomy remains the most effective treatment for a significant group of patients with hemorrhoids, despite the potential for postoperative pain. The purpose of this study was to evaluate the effects of analgesics and metronidazole in reducing surgical site pain and complications after hemorrhoidectomy. The prospective observational study was conducted in government cuddalore medical college and hospital for the period of 4 months (November 2023 to February 2024). Patients undergoing hemorrhoidectomy was followed during their post-operative days. Postoperative pain, bleeding, edema, pruritus, and tenesmus were evaluated during the following three periods: from immediately after the operation until postoperative day (POD)7 and POD14. The patients were required to complete symptom questionnaires and to attend postoperative follow-up on PODs 7 and 14. Data like pain scores on the first three postoperative days, analgesic requirements, hospital stay and the time to return to normal daily activities were collected and analyzed with the suitable statistical tool. Use of metronidazole in combination with other analgesics (tramadol, diclofenac) significantly reduced pain during the first bowel motion after excisional hemorrhoidectomy.

**KEYWORDS :** Metronidazole, Hemorrhoidectomy, Postoperative pain, Complications.

### INTRODUCTION

**Haemorrhoids** (or **haemorrhoids**), also known as **piles**, are vascular structures in the anal canal. In their normal state, they are cushions that help with stool control. They become a disease when swollen or inflamed; the unqualified term *haemorrhoid* is often used to refer to the disease. The signs and symptoms of haemorrhoids depend on the type present. Internal haemorrhoids often result in painless, bright red rectal bleeding when defecating. External haemorrhoids often result in pain and swelling in the anus.

Haemorrhoids remains the most common anorectal disorder and are frequently seen in primary care clinics, emergency wards, gastroenterology units and surgical clinics.<sup>[1]</sup> These patients may present with rectal discomfort, swelling, pain, discharge, and bleeding at the time of defecation and a full evaluation of these complaints is necessary, in the form of a detailed history and clinical examination which includes (but not limited to) digital rectal examination and rigid proctoscopy.

Indications for surgery include failure of non-operative management, acute complicated haemorrhoids such as strangulation or thrombosis, patient preference, and concomitant anorectal conditions such as anal fissure or fistula in ano.<sup>[2]</sup> Common surgical methods used in contemporary practice today are Open (Milligan-Morgan) Haemorrhoidectomy, Closed (Ferguson) Haemorrhoidectomy and Stapled Hemorrhoidopexy.<sup>[3]</sup> The major post-operative complications of haemorrhoidectomy are pain, infection, haemorrhage, urinary retention, anal stenosis, faecal incontinence, and non-healing wound.<sup>[4]</sup> Postoperative pain after a Milligan-Morgan haemorrhoidectomy, which is still the most performed surgery today, remains a major problem for anorectal surgeries all over the world.

The spasm of internal anal sphincter appears to be the main cause for post haemorrhoidectomy pain while the other reason being secondary infection in the wound due to bacterial colonization.<sup>[5]</sup> Various invasive and non-invasive

methods have been suggested to relieve internal sphincter spasm and hence alleviate post haemorrhoidectomy pain. These include Glyceryl Trinitrate cream, calcium channel blockers, Botox Injection, Bupivacaine and Metronidazole.<sup>[6]</sup> This study investigated whether the use of metronidazole resulted in clinically significant reduction in pain in post-operative period and less of analgesic drugs.

### METHODS

A prospective observational study was performed based on the inclusion and exclusion criteria.

#### Inclusion criteria

All patients of different age groups with Grade 2, 3 or 4 haemorrhoids attending the surgical OPD at RMMCH Hospital, Chidambaram from (November 2023 to February 2024), who were willing for haemorrhoidectomy surgery were included in the study.

#### Exclusion criteria

Patients of early Grade 1 haemorrhoids or with co-existing anal pathologies or with serious life-threatening illnesses (ASA status III, IV, V) or allergies to Metronidazole were excluded.

The patients thus included, were assessed by a detailed history and clinical examination including digital rectal examination and rigid proctoscopy examination. The details for the VAS were obtained by direct interaction with the patient on the respective post operative days. The data thus collected is analysed with the suitable statistical tool and Microsoft word and excel have been used to generate graphs, tables to provide significant results.

### RESULT AND DISCUSSION

A total of 40 patients who had undergone haemorrhoidectomy surgery were analysed.

#### Age Wise Distribution

In our study 72.5% of patients were under the age group of

above 40 years and 27.5% of patients in haemorrhoidectomy surgery were below 40 years.

AGE	Number	%
Below 40 years	11	27.5
Above 40 years	29	72.5

#### Gender Wise Distribution

More male patients were involved in the surgery than females.

GENDER	Number	%
Male	26	65
Female	14	35

#### Patients With Co-morbidities

Haemorrhoidectomy was performed more in patients with comorbidities than a healthy individual which may be a factor responsible for delayed wound healing and recovery.

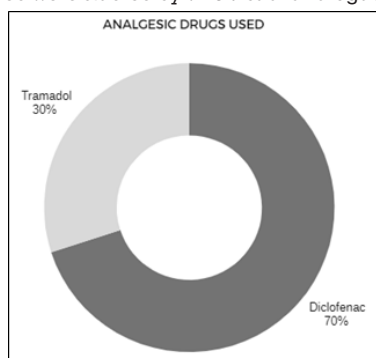
PATIENTS	Number	%
With comorbidities	22	55
With out comorbidities	18	45

#### Chief Complaints In Patients With Haemorrhoids

Most of the patients with the haemorrhoids were with the complaints of pain and irritation around the anus, swelling or a hard lump around the anus, pain during defecation and bright red colour in the stool.

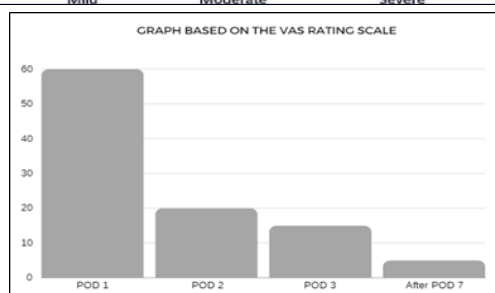
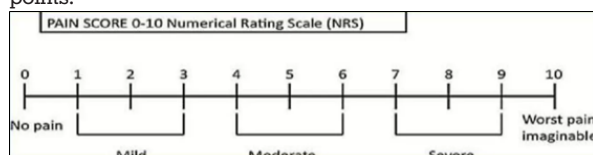
#### Drugs Administered For The Management Of Pain After Surgery

Metronidazole was administered to all patients following haemorrhoidectomy surgery along with other analgesic drugs like diclofenac and tramadol. The effectiveness of analgesics administered were studied by VAS visual analogue scale.



#### Visual Analogue Scale

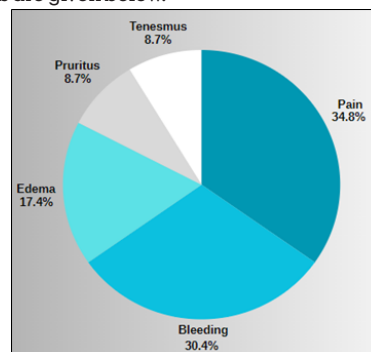
The **visual analogue scale (VAS)** is a psychometric response scale that can be used in questionnaires. It is a measurement instrument for subjective characteristics or attitudes that cannot be directly measured. When responding to a VAS item, respondents specify their level of agreement to a statement by indicating a position along a continuous line between two end points.



In our study 40 patients who had undergone hemorrhoidectomy were supposed to fill the questionnaire VAS (VISUAL ANALOGUE SCALE), during 3 stages after surgery – immediately after surgery, on the post-operative day 7 and 14 and the results were summarized below.

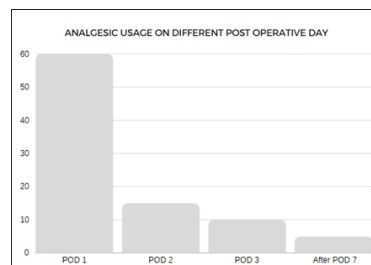
#### Factors To Assessed On Vas After Surgery Includes

Patients were assessed about their conditions like pain, bleeding, edema, pruritus, and tenesmus through direct patient interaction or through telephone after their discharge and results are given below.



#### Analgesic Requirement

Administration of analgesics (Diclofenac and tramadol) and metronidazole decreased pain and post-operative complications in patients after hemorrhoidectomy. Metronidazole decreased the analgesic usage and its side effects.



Based on the administration of metronidazole the length of hospital stays of patients after surgery varied to the greater extent, metronidazole thus helped in the faster wound healing, less use of analgesic drugs and decreased the patients time to return to the normal activity.

In a study by Carapeti et al (1998), patients who were on oral metronidazole for 7 days after surgery had significantly less pain than the control on days five, six and seven. Patient satisfaction was also better with the procedure in the metronidazole group.<sup>[6]</sup> Holzheimer et al used topical 10 percent metronidazole which was applied to the surgical site and patients had significantly less postoperative pain than those in the placebo group by day 14.<sup>[6]</sup> The study by Åla S et al also indicates that topical 10 percent metronidazole significantly reduce post haemorrhoidectomy discomfort and also pain during defecation postoperatively compared with that of the placebo control group.<sup>[9]</sup>

The analgesic consumption was needed for a shorter duration in case of administration of metronidazole. The exact mechanism of Metronidazole causing pain relief is not known. Speculations of relief of anal sphincter spasm and prevention of secondary infection have been proposed. But a significant finding of our study was the fact that there is a difference in using metronidazole in combination with analgesic drugs. This probably, would refute the logic of local effect of metronidazole acting as an antispasmodic to relieve post haemorrhoidectomy pain.

#### CONCLUSION

Continuation of metronidazole in the form of oral, IV or topical preparation in the post-operative period results in better pain relief and less use of analgesic drugs and therefore could correlate to earlier return to daily life activities as compared to its administration as preoperative antibiotic only. There is no additional benefit of topical metronidazole over oral metronidazole in pain relief in the post-operative period after surgery and hence both can be used interchangeably.

## REFERENCES

1. Welling DR, Wolff BG, Dozois R. Piles of defeat: Napoleon at Waterloo. *Dis Colon Rectum*. 1988;31(4):303-5.
2. Milligan ET, Morgan CN, Jones LE, Officer R. Surgical anatomy of the anal canal and operative treatment of haemorrhoids. *Lancet*. 1937; 11:1119-94.
3. Pescatori M. Closed hemorrhoidectomy. *Ann Ital Chir*. 1995;66:787-90.
4. Joshi GP, Jaschinski T, Bonnet F, Kehlet H. Prospect collaboration. *BMC Anesthesiol*. 2015;15:159.
5. Al-Mulhim AS, Ali AM, Al-Masoul N, Alwahidi A. Post hemorrhoidectomy pain: a randomized controlled trial. *Saudi Med J*. 2006;27(10):1538-41.
6. Rohimi R, Abdollahi M. A systematic review of the topical drugs for post hemorrhoidectomy pain. *IJP* 2012;8(7):628-37.
7. Carapeti EA, Kamm MA. Double blind randomised controlled trial of the effect of metronidazole on pain after day care hemorrhoidectomy. *Lancet*. 1998;351(9097):169-72.
8. Holzheimer RG. Hemorrhoidectomy-indications and risks. *Eur J Med Res*. 2004;9(1):18-36.
9. Ala S, Saeedi M, Eshghi F, Mirzabeygi P. Topical metronidazole can reduce pain after surgery and pain on defecation in postoperative hemorrhoidectomy. *Dis Colon Rectum*. 2008;51(2):235-8.