

## Assessment of Oral Metronidazole in Pain Management Post Haemorrhoidectomy

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### ABSTRACT

**Background:** Haemorrhoids are a very popular disease. Approximately 50% to 66% of people have problems with haemorrhoids at some point in their lives. The pathophysiology of haemorrhoids is not exactly well known. Theories were developed trying to understand the pathophysiology of haemorrhoids e.g., varicose vein theory, anal lining sliding theory, hyperactivity of internal sphincter theory and vascular hyperplasia theory. Diagnosis is made by integration of available clinical data (symptoms), clinical examination and investigations. Although, we are using the term to refer to the disease resulting from their congestion and swelling, it is hard to evaluate the exact prevalence of haemorrhoids in a certain community as a lot of people suffering from the condition don't seek for medical advice

**Objectives:** This thesis study was done to assess the efficacy of oral metronidazole administration in management of post haemorrhoidectomy pain.

**Patients and Method:** This study was conducted at El Demerdash Hospital and Damanhour National Institute in 1/1/2018 to 30/6/2018. 80 patients presented to the General Surgery Clinic and met the inclusion criteria in six month duration. The participants were divided into two groups 40 in each group.

**Results:** When the results of both groups were put in a comparison, it showed that group A had a significant lower pain values in day 1 and 3 than group B but both groups ( $p=0.043^*$ ,  $p=0.004$ ) results were equivocal in day seven with no significant difference ( $p=0.268$ ). Also results showed that group B needed more analgesics than group A and that confirms that metronidazole do decrease pain experienced by the patients after the operation and decreased their need for analgesics ( $p=0.043$ ). Otherwise, both groups show no significant differences according to the time of first bowel movement ( $p=0.967$ ).

**Conclusion:** Oral Metronidazole administration post haemorrhoidectomy significantly decrease the post-operative pain and decrease the need for more analgesics with no significant effect on the time of the first bowel movement.

**Key words:** Haemorrhoidectomy, postoperative pain, metronidazole, analgesics

### INTRODUCTION

Haemorrhoids are a very common medical problem. Approximately 50% to 66% of people have problems with haemorrhoids at some point in their lives<sup>(1)</sup>.

Haemorrhoids are normally findings of vascular structures in the anal canal although, we used to use the term to refer to the disease resulting from their congestion and swelling. It is hard to evaluate the exact prevalence of haemorrhoids in a certain community as a lot of people suffering from the condition don't seek medical advice. At least 50% of US population suffer from haemorrhoids at some times during their life span and around 5% of the population are affected at any given time<sup>(1)</sup>.

Haemorrhoids are classified into internal haemorrhoids and external haemorrhoids according to their presence to the dentate line. External haemorrhoids are derived from ectoderm, while internal haemorrhoids are developed from endoderm<sup>(2)</sup>.

A number of factors are thought to be a cause for example, Low-fiber diets, straining and constipation. As a result of low-fiber diets intake, small-caliber stools are formed, which result in

straining during defecation, which interferes with venous return causing congestion of the haemorrhoids. In addition, prolonged sitting on a toilet is thought to cause some sort of decrease in the venous return in the perianal area (a tourniquet effect), causing congestion of haemorrhoids<sup>(3)</sup>.

In about 40% of patients suffering from pathological haemorrhoids, there are no significant symptoms. Patients may suffer from only internal or external haemorrhoids but a combination of both also is reported<sup>(4)</sup>.

Haemorrhoids are usually diagnosed by physical examination, inspection of the anus and the surrounding area can verify presence of external haemorrhoids and prolapsed internal ones, which may be or may be not thrombosed. Full examination by doing PR to detect any polyps, tumours, enlarged prostate or abscess may be not possible without proper sedation because of pain. Differentiation between external and internal haemorrhoids is according to their relation to dentate line<sup>(5)</sup>.

Conservative treatment usually consider advice of having high dietary fiber diet, plenty intake of water and oral fluids to keep good hydration, nonsteroidal anti-inflammatory drugs,

sitz baths, and rest <sup>(1)</sup>. Topical agents and suppositories are available, but of little value especially with advanced degrees <sup>(6)</sup>.

In advanced cases, physicians consider surgical procedures as rubber band ligation which is usually the first-line treatment especially in those with grade 1 to 3. In addition, sclerotherapy has success rate about 70%. Other methods like electrocautery, infrared radiation, laser surgery or cryosurgery can be effective for haemorrhoids. Excisional haemorrhoidectomy is usually the first and most effective line of treatment in severe cases, but the post-operative pain is usually significant and is the most important complications and requires 2–4 weeks for recovery <sup>(7)</sup>.

## PATIENTS AND METHODS

**Type of Study:** Randomized Comparative prospective study.

**Study Setting:** The study was conducted in Ain Shams University Hospital (El-Demerdash) and other authorized hospitals (Damanhour National Medical Institute).

**Study Period:** Six month starting in January 2018 to June 2018

**Study Population:** Convenient patient presented to General Surgery Clinic during the six months mentioned above. The total number of the patient participated in this study is 80 patients, 40 patients in each group.

**Inclusion Criteria:** Patients > 18 years old. Patients able to consent. Patients with grade 2, 3 and 4 piles (not complicated).

**Exclusion Criteria:** Patients <18 years old. Patients known to have IBD. Patients with associated fissure. Patients allergic to oral metronidazole. Complicated piles.

**Ethical Considerations:** Name of the patient were not needed.

**Study Tools:** A nameless questionnaire was given to patients underwent haemorrhoidectomy in El-Demerdash Hospital and Damanhour National Institute in six months starting from January 2018 to June 2018 to assess the efficacy of the given drug in controlling the pain post-operative. A numeric pain score was used to assess pain degree in day 1, 3 and 7 post-operatives. In addition, time of first bowel motion was noted. Post-operative complications were recorded.

**Study Procedures:** All patients presented to the General Surgery Clinic with grade 2,3 and 4

uncomplicated piles who were advised to undergo open haemorrhoidectomy were subjected first to pre-operative investigations which was: Complete blood count. PT and PTT. RBG(age>40). ECG(age >40).

All fit patients did open haemorrhoidectomy (Milligan Morgan Haemorrhoidectomy)

### Procedure Technique:

**Anaesthesia:** Under spinal anaesthesia.

**Position:** Lithotomy position. Surgeon sat facing the perineum.

**Skin preparation:** Perineum and anal canal were sterilized by betadine 7.5%

### Procedure:

First inspection of the perineum and anal canal, insertion of anal speculum to display the haemorrhoids to be operated upon. The haemorrhoid was grasped at the mucocutaneous junction, with a haemostatic forceps, and pulled distally towards the physician. A V shaped incision of the skin was done at the base of the hemorrhoid with the base of the V towards the haemorrhoid using a scalpel, scissors or diathermy according to the preference of the surgeon. The incision was continued into the mucosa in either side of the haemorrhoid raising it off the underlying muscles of the internal sphincter. The dissection was done up to the dentate line. Transfixion suture and ligation of the pedicle of the haemorrhoid with a 2/0 vicryl suture then excision of the haemorrhoid tissue 0.5 cm distal to the ligature.

### Post-operative periods:

The patients were randomly divided into two groups according to the given post-operative drugs. An oral consent was taken from the patients and their treating surgeons to observe the procedures and record the post-operative treatment and to communicate with the patients postoperatively to assess their response to the given treatment using a nameless questionnaire assessing pain in the first, 3rd and 7th day post-operative. The patients stayed in the hospital for 24 hours post-operative. We recorded the given treatments and divided the patients to two groups with paracetamol vail / 8 hours constant for both groups and fluid diet in the 1st 24 hours

Group A "40 n" (paracetamol vail /8 hrs. + flagyl 500 mg vail /8 hrs.) First day and on discharge (flagyl 500 mg tab 1/8hrs).

Group B "40 n" (paracetamol vail /8 hrs.) 1st day and on discharge (Panadol 500 mg tab 1/8hrs).

**Assessment included:**

Numeric Pain score 0-10 days 1, 3 and 7 post-operative. First bowel motion. Postoperative complications. Statistical methods: the statistical results were done by specialists in private office

**RESULTS**

**Table (1):** Comparison between the two studied groups concerning pain.

Pain	Group A (n=40)		Group B (n=40)		$\chi^2$	p
	No.	%	No.	%		
1st day						
0-4	8	20.0	4	10.0	6.275*	0.043*
5-7	20	50.0	13	32.5		
7-10	12	30.0	23	57.5		
3rd day						
0-3	19	47.5	11	27.5	12.758*	MCp=0.004*
4-6	17	42.5	12	30.0		
7-8	4	10.0	10	25.0		
9-10	0	0.0	7	17.5		
7th day						
0-3	35	87.5	29	72.5	2.781	MCp=0.268
4-6	4	10.0	8	20.0		
7-8	1	2.5	3	7.5		
p1	<0.001*		<0.001*			

**Table (2):** Comparison between the two studied groups regarding need for analgesics.

Need for analgesics	Group A (n=40)		Group B (n=40)		$\chi^2$	p
	No.	%	No.	%		
No	27	67.5	18	45.0	4.114*	0.043*
Yes	13	32.5	22	55.0		

**Table (3):** Comparison between the two studied groups concerning hours for the first bowel motion.

Hours for the first bowel motion	Group A (n=40)		Group B (n=40)		$\chi^2$	MCp
	No.	%	No.	%		
6 hours	12	30.0	12	30.0	0.638	0.967
12 hours	20	50.0	18	45.0		
24 hours	7	17.5	8	20.0		
36 hours	1	2.5	2	5.0		

According to these statistical data, metronidazole was effective in controlling post-operative pain especially in day 1 and day 3. It

decreased the need for postoperative analgesics but did not affect the time needed for the first bowel movement.

**DISCUSSION**

Haemorrhoids are a very common disease and usually it could be treated by life style modification and medical drugs. Sometimes-surgical intervention is needed. Since the pain was the most agonizing postoperative complication, it was a must to evaluate the various protocols used to control it. A Lot of drugs and techniques were used to manage postoperative pain and metronidazole was one of the used drugs<sup>(8)</sup>.

Metronidazole is an antibiotic which is effective against anaerobic gram-negative bacilli e.g. bactericides flagilis, anaerobic gram-positive bacilli e.g. clostridium spp, anaerobic cocci e.g. peptostreptococcus species and protozoa e.g. entamoeba histolytica. Many studies were done to evaluate efficacy of metronidazole in management of pain post-haemorrhoidectomy<sup>(9)</sup>.

This randomized comparative prospective study for assessment of metronidazole on pain control after haemorrhoidectomy was done on 80 patients underwent open haemorrhoidectomy. They were divided into two groups: group A (metronidazole 500 mg tab three times per day post-operative (n=40) and group B (Panadol 500 mg tab two per day) for seven days post-operative. Results showed that patients in metronidazole group needed less additional analgesics post operatively (32% vs 55%). Pain assessment in day one showed that 30% vs 57.5 suffered from the highest pain value on the scale. While, 50% vs 32.5% reported moderate pain value with P = 0.043. On day 3 the results were more significant as 47.5% vs 27.5% reported the lowest pain value on the scale, while 0% vs 17.5% reported the highest pain value on the scale with p= 0.004. These results go with the results of the controlled clinical trial done in 2015. The study was done on 44 patients 22 on each group but the groups were using metronidazole 400 mg vs placebo group. The results showed significant difference in post-operative pain in day 1 and day 3 just like our results but also there was still significant difference in day seven which was not present in our study<sup>(10)</sup>.

## CONCLUSION

Oral metronidazole administration post-haemorrhoidectomy significantly decreased the post-operative pain and decreased the need for more analgesics with no significant effect on the time of the first bowel movement.

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