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## Comparative study of management of second and third degree Hemorrhoids with injection Sclerotherapy using Polidocanol

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### Abstract

**Background:** Hemorrhoid is the anal disease and causes major morbidity and economic burden. Surgical treatment causes major complications. Injection Sclerotherapy is widely used in the treatment of hemorrhoids. So the present study was carried out to find the comparative effectiveness of Injection Sclerotherapy using Polidocanol for the management of second and third degree hemorrhoids.

**Methods:** A total of 50 patients reported to the surgical outpatient department of Government Medical College, Dungarpur with second and third degree hemorrhoids were included in this study. The patients were divided into two groups ie. Second and third degree hemorrhoids (n=25). Injection polidocanol was used for the Sclerotherapy with three doses at an interval of 3 weeks.

**Results:** In the present study most of the patients were in the age range of 51-60 year and male preponderance was high. In second degree hemorrhoids patients 96% displayed satisfactory relief as compared to third degree hemorrhoids patients only 72% elicited satisfactory outcome.

**Conclusion:** Thus injection Sclerotherapy using Polidocanol elicits good results with less complications and low cost. Further, the results have shown that this method is effective in second degree hemorrhoids as that of the third degree hemorrhoids.

**Keywords:** Hemorrhoids, injection Sclerotherapy, Polidocanol, second degree Hemorrhoids

### Introduction

Haemorrhoids, also referred as piles are a pathological condition occurring at the anorectal region. Globally the incidence ranges from 50-80% and in India it affects around 75% of the population [1]. Haemorrhoids, generally has the peak prevalence at the age of 45 to 65 years and affects both the genders. The factors associated with the development of haemorrhoids encompass erect posture, constipation, straining during defecation, high fat diet and low fibre intake [2]. Based on the degree of prolapse, Goligher has graded the Haemorrhoids for the accurate treatment. Thus, first degree Haemorrhoids has visible vessels, second degree haemorrhoids prolapse with defecation and restore instantly, third degree lesions prolapse but requires manual replacement and fourth degree lesions prolapse out of the anal canal [3]. Based on the degree of haemorrhoids, the treatment strategies include dietary restriction, injection sclerotherapy, rubber band ligation, scalpel and laser surgery [4, 5]. When compared to other treatment modalities, injection sclerotherapy is a widely employed outpatient clinical procedure to treat first and second-degree haemorrhoids. This technique is reliably safe, cost effective, less time consuming and success rate is high [6, 7]. Various sclerosing agents like Sodium tetra decyl sulphate, polidocanol, sodium morrhuate and ethanalamine oleate have been used for clinical management of haemorrhoids [8]. Among the various sclerosing agents, polidocanol has a sclerosant as well as local anesthetic property. Due to this it elicits painless sclerotherapy, low incidence of allergy and anaphylaxis reactions [6]. In this back drop, the present study was conducted to study the comparative outcome of injection sclerotherapy with polidocanol for the management of second and third degree haemorrhoids.

### Materials and Methods

The present study was carried out at Department of Surgery, Government Medical College, Dungarpur from May 2018-April 2019. A total of 50 patients reported to the surgical outpatient department of second and third degree hemorrhoids diagnosed by proctoscopy according to

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Golligher's classification and above 18 years of age of both sexes were included in the study. Patients with chronic diseases, undergone previous anorectal surgeries, fourth degree hemorrhoids, allergic to sclerosant and colorectal cancer patients were excluded from the study.

In this study, out of 50 patients 25 patients were presented with 2<sup>nd</sup> degree hemorrhoids and the remaining 25 patients were presented with 3<sup>rd</sup> degree hemorrhoids.

Group 1- 25 patients with 2<sup>nd</sup> degree hemorrhoids

Group 2- 25 patients with 3<sup>rd</sup> degree hemorrhoids

Injection polidocanol was used for the sclerotherapy of 2<sup>nd</sup> and 3<sup>rd</sup> degree piles. Injection sclerotherapy is performed using 3 ml disposable syringe. After locating the haemorrhoids with help of proctoscope, the needle is introduced in to the center mass of veins, through the mucous membrane. It is important that the injection be made in to submucosa at the base of the haemorrhoidal tissue and not in to the haemorrhoids themselves; taking care not to enter the lumen of the vein or traverse to the sensitive margin of the dentate line. To ensure the needle is not in the lumen, plunger is drawn back before injecting. No antiseptic is necessary. The injection was placed in the upper part of the haemorrhoid, injecting 0.5 – 1ml at each site to a maximum of 3ml. Correction sitting must be verified by a trial injection of a small amount which should be seen to raise and pale the overlaying mucosa and be crossed by blood vessels, the so called striation sign. If no mucosal swelling occurs immediately with a trial injection, the needle must be withdrawn further. A very great care was taken to prevent mislocation to avoid disastrous consequences. Treatment sessions for the same anatomic locations were carried out at intervals of 3 weeks. After the procedure, the patients were given a standardized treatment of Ofloxacin 200 mg twice daily and Ornidazole 500 mg twice daily for five days along with the advice to increase vegetable intake in diet. All the patients were called for regular follow-up.

## Results

50 patients were included in the study of which there were 30 males and 20 females. The age of patients were ranged from 30-60 years. The maximum patients were in the age group between 51-60 years (50%). The age distribution of the patients was displayed in Table 1.

Regarding clinical presentation, per rectal bleeding was present in all the cases (100%), constipation was present in 40 cases (80%) and pain during defecation was observed in 22 cases (44%).

**Table 1:** Age distribution of the patients in the present study

Age group (in Years)	No of Patients	Percentage (%)
30-40	10	20
41-50	15	30
51-60	25	50

In the present study, patients with second degree hemorrhoids after giving 3 doses of polidocanol at the interval of three weeks 24 patients (96%) showed significant reduction in the size of hemorrhoids and the bleeding was reduced completely. The remaining one patient was suggested for alternative treatment. Meanwhile in the case of patients with third degree hemorrhoids, 19 patients (72%) showed significant reduction in the size of hemorrhoids and the bleeding was reduced completely. In the remaining 6 patients (28%), 4 patients

required additional 2 doses of polidocanol at interval of 3 weeks for complete relief and the other 2 patients needed other procedure (Table 2).

**Table 2:** Distribution of patients according to response of sclerotherapy

Types of haemorrhoids	No of patients	No of patients cured	Percentage (%)
Second degree	25	24	96
Third degree	25	19	72

## Discussion

Hemorrhoid is a serious anal disease affecting the global population which causes significant morbidity and also imposes economic burden among the patients. Hemorrhoidectomy is the mainstay treatment, post-operative it causes serious complication like pain, long hospital stay, bleeding and anal stricture. So, minimal invasive treatment methods are required for the management of hemorrhoid without resection [9].

Injection sclerotherapy is very effective and minimal invasive procedure for the treatment of hemorrhoids. Polidocanol is a major sclerosant used in the sclerotherapy and employed in the management of various pathological conditions varicose veins, esophageal variceal, vascular disease, hemangiomas, internal hemorrhoids and cystic diseases. In 2010, polidocanol is approved by the Food and Drug Administration for the treatment of hemorrhoids. So the present study was done to evaluate the effect of polidocanol in the management of second and third degree hemorrhoids [10].

In the present study higher number patients aged ranged from 51-60 years are affected with hemorrhoids. In a study conducted by Rizwan Mansoor Khan *et al.* the prevalence of hemorrhoids are higher in patients with age more than 40 years [11]. In our study, male preponderance is higher of around 60% and it consistent with the study done by Rizwan Mansoor Khan *et al.* where the prevalence of male is higher (75.9%).

Regarding clinical presentation, constipation was seen in all patients followed by per rectal bleeding in 80% of the cases. However, in a study conducted by Rohit *et al.* per rectal bleeding is the major clinical presentation present in all the patients as that of the constipation [12].

In the present study, injection sclerotherapy with polidocanol showed satisfactory outcome in the management of hemorrhoids. However, polidocanol treatment showed better efficacy in second degree hemorrhoids, out of 25 patients, 96% patients were cured completely at 3 doses at the time interval for three weeks. Meanwhile in patients with third degree hemorrhoids only 72% of the patients were cured completely. Thus in this study, polidocanol treatment was effective in treatment for second degree hemorrhoids as that of the third degree hemorrhoids. Similar to our reports, study conducted by Mukhopadhyay *et al.* at three doses of injection 89.66%, patients had satisfactory results [13].

Thus in conclusion, polidocanol is an effective and safe sclerosant for the treatment of second and third degree haemorrhoids. Further, injection sclerotherapy is a reliable method for the non-surgical management of haemorrhoids and it is found to be safe and cost effective.

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