E-ISSN: 2616-3470
P-ISSN: 2616-3462

www.surgeryscience.com
2019; 3(2): 24-27
Received: 14-02-2019
Accepted: 18-03-2019

Karuppasamy Nallan
Department of Paediatric Surgery, Madurai Medical College and Government Rajaji Hospital, Madurai, Tamil Nadu, India

Hemanthkumar Boopathy
Department of Paediatric Surgery, Madurai Medical College and Government Rajaji Hospital, Madurai, Tamil Nadu, India

Jayakumar Palanisamy
Department of Paediatric Surgery, Madurai Medical College and Government Rajaji Hospital, Madurai, Tamil Nadu, India

Maruthupandian Dheivendiran
Department of General Surgery, Madurai Medical College and Government Rajaji Hospital, Madurai, Tamil Nadu, India

Karunakaran Kathiresan
Department of General Surgery, Sivagangai Medical College, Sivagangai, Tamil Nadu, India

Latha Dhanasekaran
Department of General Surgery, Madurai Medical College and Government Rajaji Hospital, Madurai, Tamil Nadu, India

Thirumalaikannan Shenbagavel
Department of General Surgery, Madurai Medical College and Government Rajaji Hospital, Madurai, Tamil Nadu, India

Jothi Rajan Ganesan
Department of General Surgery, Madurai Medical College and Government Rajaji Hospital, Madurai, Tamil Nadu, India

Correspondence
Hemanthkumar Boopathy
Department of Paediatric Surgery, Madurai Medical College and Government Rajaji Hospital, Madurai, Tamil Nadu, India

Is there any role for anti-histamine drug cetirizine in hernioplasty patients?: A case control study

Karuppasamy Nallan, Hemanthkumar Boopathy, Jayakumar Palanisamy, Maruthupandian Dheivendiran, Karunakaran Kathiresan, Latha Dhanasekaran, Thirumalaikannan Shenbagavel and Jothi Rajan Ganesan

DOI: https://doi.org/10.33545/surgery.2019.v3.i2a.08

Abstract
Objective: To determine the effect of anti-histamine cetirizine on reducing the drain fluid amount in hernioplasty patients.
Method: A retrospective case control study was done in hernioplasty patients with and without cetirizine. The main parameters measured are total mean drain amount, mean drain reduction from day one to two, mean drain amount on day three and drain removal day.
Results: Among the 109 participants analyzed, Cetirizine used group (Group I or cases) were 72 clients and the cetirizine deferred control group (Group II or controls) were 37 clients. Drain amount on post-operative day 3 for cases is 15.2 ml and for controls 20.5 ml with significant P value of 0.04. Total mean drain amount till drain removal, drain reduction from day 1 to day2 and mean drain removal day are less for cases but not statistically significant.
Conclusion: Cetirizine appears to reduce the drain amount but it needs to be proved by further studies.

Keywords: Cetirizine, drain, hernioplasty, lichenstein

Introduction
Inguinal hernia is one of the common hernia among abdominal wall hernias. Inguinal hernia is commonly treated with lichensteins hernioplasty with less recurrence rates. Drain use in inguinal hernioplasty is controversial, but many surgeons prefer to keep drain for the first few days particularly in patients with excessive dissection like complete indirect inguinal hernias [1-4]. Inguinal Hernioplasty results in various amount of inflammatory reaction at the mesh site. Inflammatory reaction may vary according to type and material of mesh used. Antihistamine drug cetirizine is used to treat common cold, urticarial, allergy, etc., which may reduce secretion at the inflammatory site [5, 6]. Some surgeons use cetirizine off label for hernioplasty patients, so we try to explore the effect of cetirizine in their drain fluid amount and whether it influences early drain removal.

Hypothesis
Antihistamine drugs when used in hernioplasty patients may reduce the inflammatory reaction as well as allergic reaction to mesh at operated site and reduce the drain fluid amount, which will favour early drain removal and reduce the mesh infection due to seroma.

Testing of Hypothesis
Here we did a retrospective study in lichensteins hernioplasty patients' drain fluid amount with and without antihistaminic drug cetirizine.

Materials and Method
A retrospective case control study was conducted in unilateral hernioplasty patients treated with cetirizine and without cetirizine in relation to drain amount, drain removal day, scrotal edema and wound erythema or edema. Case sheets of hernioplasty patients operated in our ward during the period of January 2017 to December 2017 were used for data collection. Ethical committee clearance was obtained. Cetirizine used group is Group-I or cases and cetirizine not used group is Group-II or controls.

All statistical analyses were carried out for significance at 5% (P=<0.05) as level of significance.

Results

Total 109 patients were enrolled in to the study, among them 108 were males and only one was a female. Mean age of the patients was 51.2 years. Among the study group 62(57%) of them were smokers.

Hernia aggravating factors like heavy weight lifting, chronic cough, difficulty in micturition, etc were present in 79(72.5%) of the patients. Among the hernia types the frequencies were as follows, Indirect hernia 65(59.6%), Direct Inguinal hernia 40(36.7%) and both the components were present in 4(3.7%).

Postoperative complications observed were transient testicular swelling 6(5.5%), wound edema or erythema 7(6.4%) and seroma 6(5.5%). But all of them were treated conservatively and none needed any intervention.

Cetirizine used group (Group I) were 72 clients and the cetirizine deferred control group (Group II) were 37 clients. Average age of the clients in years was 49.3 in group-I and 55.0 in group-II. Mean weight in kilograms for group-I was 57.3 and for group-II was 57.5.

Mean number of days of drain kept for cases was 3.0 and for controls 3.1. Mean total drain amount for all days before drain removal in mille liters for the cases was 97.6 and for controls was 112.7. The reduction in drain removal day or the mean amount of total drain reduction was statistically not significant [Table.1].

Drain amount on post-operative day 3 for cases was 15.2 ml and for controls 20.5 ml with the P value of 0.04, which is significant [Figure.1]. Reduction in drain amount between post-operative day 1 and day 2 was 27.6 ml for cases and 19.8 ml for controls with P value 0.12, which was insignificant [Figure.2].

Table 1: Comparison of drain amount and number of days drain kept among study groups.

S. No	Characteristics in mean standard deviation (SD)	Group		T value, degrees of freedom	P value#
		Cetirizine	No cetirizine		
1	Number of days drain kept	3.0	3.1	-0.46, 107	0.64
2	Total drain amount in ml	97.6	112.7	-1.27, 107	0.21

Note: # p value based on independent sample t test.

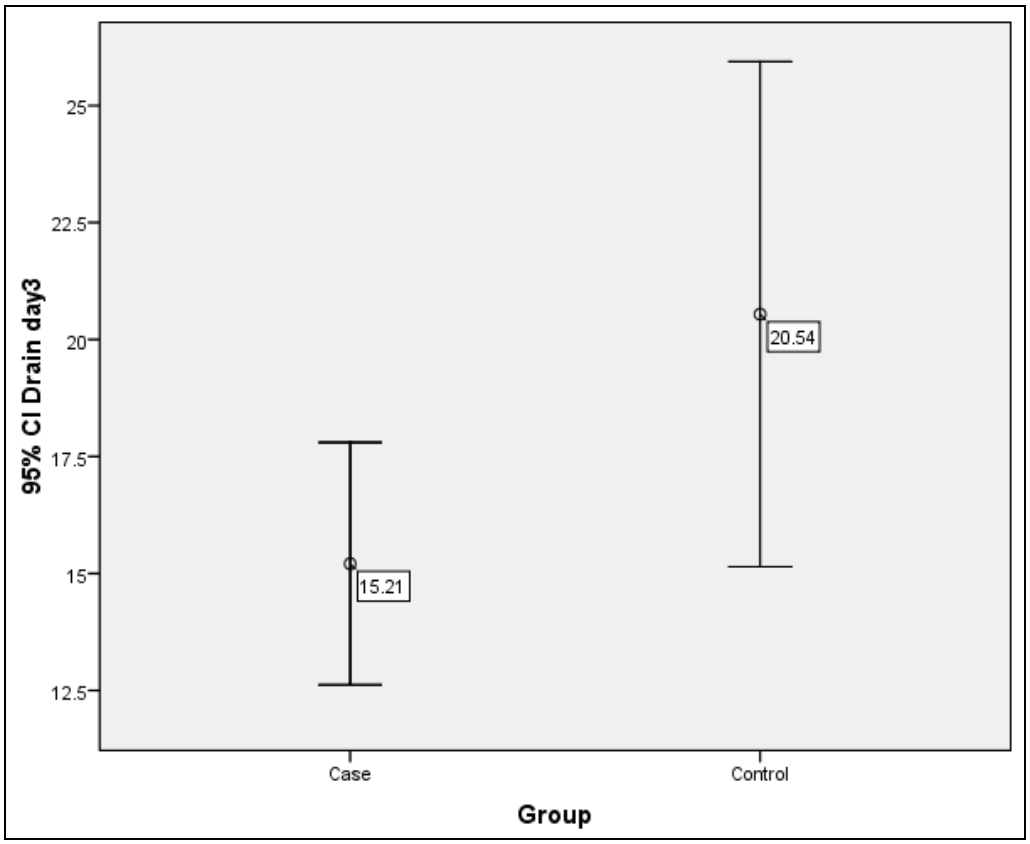

Fig 1: Mean drain amount on post-operative day 3 between cases (Cetirizine used) and not used (control)

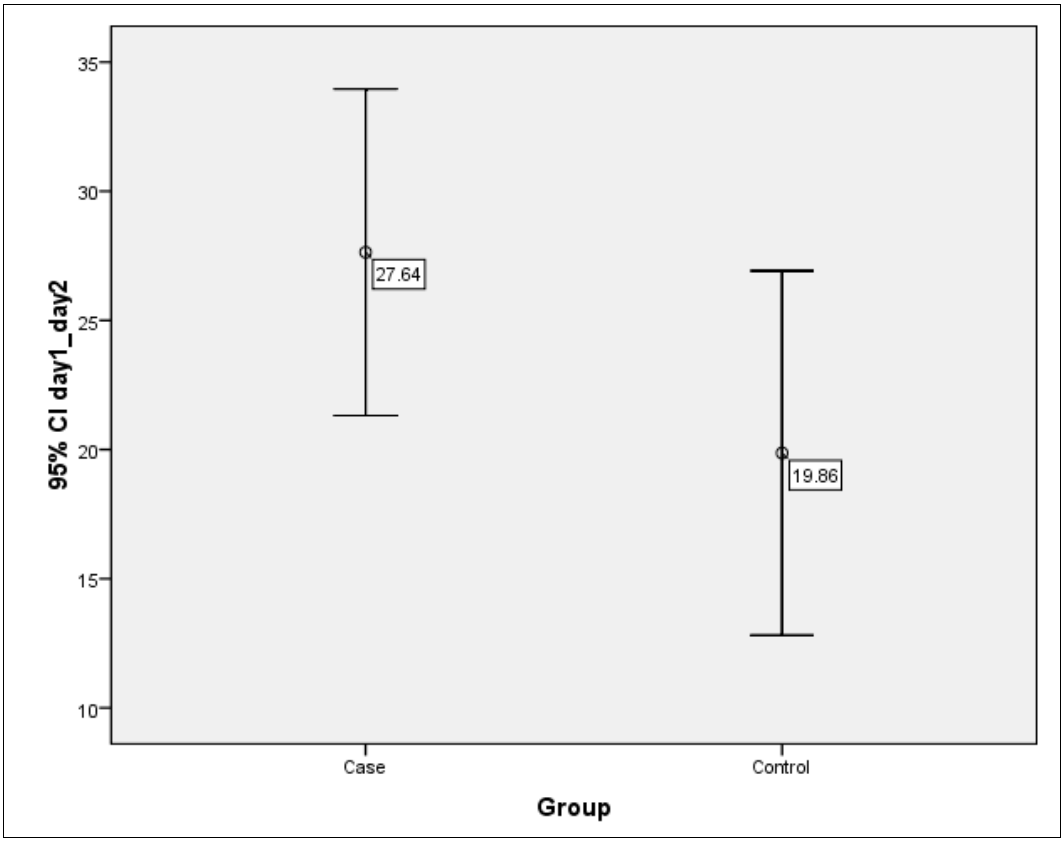

Fig 2: Mean reduction in drain amount from day-1 and day-2 post-operative period between case (cetirizine used) and control (no cetirizine).

Discussion

Mean age of the patients in our study was 51.2 years, which was comparable (53.7 years) with the study done by Sakorafas et al. In our study indirect hernia was 59.6% and direct Inguinal hernia was 36.7%, which was also comparable with their study, with indirect hernia 55% and direct hernia 30%. Both the direct and indirect components (Pantaloon) were present only in 3.7% of our subjects compared to 15% in their study subjects. Testicular swelling and seroma/hematoma noted were high (5.5%) in our study, which was only around 1% in their study [7]. Postoperative seroma/hematoma reported was 13.8% as per the study reported in our country [8], comparatively we have less seroma/hematoma formation.

Among the cases and controls mean total drain amount for all days was less for cases, but it was not statistically significant. Mean number of days drain kept for cases and controls are 3 and 3.1 days which was also insignificant. As per the literature up to 3 days of drain in not accompanied with increased infection rate [9].

Even though there was reduction in mean drain amount from first postoperative day to second postoperative day among cases, only third day mean drain among the cases were significantly less.

In this study we had included only cases belonging to single surgical unit to avoid any surgical procedure related differences, so we had only half the number of controls compared to cases which was also a drawback that we experienced in our study.

Mean age among cases was 49.3 years and controls was 55 years. Younger age group cases may have a confounding effect on drain amount by their good anti-inflammatory effect.

In hernioplasty drain insertion is surgeons choice, we didn't include hernioplasty patients treated without drain. We had less number of cases without drain so the effect of cetirizine needs to be studied in no drain category too, in future studies.

Cetirizine appears to have had effect on the drain amount in patients who underwent hernioplasty as per our study, but it needs to be studied further by using prospective randomized trials.

If the cetirizine is really having effect on reducing the drain amount, is it possible to reduce the drain amount in other surgeries requiring drain like modified radical mastectomy, inguinal block dissection and ventral hernia repair too?.

Conclusion

Cetirizine shows significant mean drain reduction on third day and insignificant drain reduction in day one to day two. It does not have any major effect on drain removal day or total mean drain fluid amount. Even though cetirizine appears to have positive effect in hernioplasty patients, this needs to be proved by further studies.

References

1. Khan N, Naeem M, Bangash A, Asadullah Sadiq M, Hamid H. Early outcome of Lichtenstein technique of tension-free open mesh repair for inguinal hernia. J Ayub Med Coll Abbottabad. 2008; 20(4):29-33.
2. Sakorafas GH, Halikias I, Nissotakis C, Kotsifopoulos N, Stavrou A, Antonopoulos C *et al*. Open tension free repair of inguinal hernias; the Lichtenstein technique. BMC Surg. 2001; 1:3.
3. Peiper C1, Conze J, Ponschek N, Schumpelick V. Value of subcutaneous drainage in repair of primary inguinal hernia. A prospective randomized study of 100 cases. Chirurg. 1997; 68(1):63-7.
4. Beacon J, Hoile RW, Ellis H. A trial of suction drainage in inguinal hernia repair. Br J Surg. 1980; 67(8):554-5.
5. Ousler GW, Wilcox KA, Gupta G, Abelson MB. An evaluation of the ocular drying effects of 2 systemic

antihistamines: loratadine and cetirizine hydrochloride. Ann Allergy Asthma Immunol. 2004; 93(5):460-4.
6. Woodward JK. Pharmacology of antihistamines. J Allergy Clin Immunol. 1990; 86(4-2):606-12.
7. Sakorafas GH, Halikias I, Nissotakis C, Kotsifopoulos N, Stavrou A, Antonopoulos C *et al*. Open tension free repair of inguinal hernias; the Lichtenstein technique. BMC Surg. 2001; 1:3.
8. Bhattacharyya AM, Kumar R, Kumar HRS. Experience of inguinal hernia repair in rural parts of southern India. IJRRMS. 2013; 3(3):21-23.
9. Willy C, Sterk J, Gerngross H, Schmidt R. Drainage in soft tissue surgery. What is evidence based?. Chirurg. 2003; 74(2):108-14.