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Research Article

**ROLE OF TRANEXAMIC ACID IN PREVENTION OF SEROMA
FORMATION AFTER HERNIOPLASTY**Dr Muhammad Adil Sohail¹, Dr Zainab Tariq², Dr Halima Tariq³²Services Institute of Medical Sciences³Fatima Jinnah Medical University**Article Received:** September 2020 **Accepted:** October 2020 **Published:** November 2020**Abstract:**

Introduction: Abdominal Hernia is defined as the bulging of part or whole of the contents of abdominal cavity through the weakened part of abdomen. **Objectives:** The main objective of the study is to analyse the role of tranexamic acid in prevention of seroma formation after hernioplasty. **Material and methods:** This cross sectional study was conducted in SIMS, Lahore during 2019 to 2020. The data was collected from 50 patients of hernioplasty. All the patients admitted from surgical OPD with the diagnosis of ventral abdominal hernia were included. Patients suffering from uncontrolled diabetes mellitus, cirrhosis, bleeding disorders and those with strangulated hernias were excluded. **Results:** The data was collected from 50 patients. In Group-1 (patients who received tranexamic acid postoperatively), out of 35-patients only 11-patients had total drain output of 300ml. In group-2 (patients who didn't receive tranexamic acid), out of 35-patients, 12-patients had drain output between 150-300ml and 23 had drain output >300ml. **Conclusion:** It is concluded that Tranexamic acid reduces post-operative seroma formation in patients with ventral hernia repair after mesh hernioplasty. It also reduces the total time of drain removal after surgery.

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INTRODUCTION:

Abdominal Hernia is defined as the bulging of part or whole of the contents of abdominal cavity through the weakened part of abdomen. Mostly intestines or omentum come out of abdominal wall defect resulting in hernias. These hernias can occur anywhere in abdomen between chest and hips [1]. Hernia repair is the common procedure performed in surgical practice. Patients undergoing major surgeries like abdominal hernia mesh repair are at increased risk of developing seroma. Apart from this, other risk factors include age, amount of tissue dissection, use of anticoagulants and previous history of surgeries and seroma formation [2].

A seroma is simply defined as the collection of fluid occurring after any surgical procedure. This fluid is called serum and it results from leakage through damaged blood vessels and lymphatics. The seroma formation is commonly associated with the risk of infection and breakdown of surgical repair [3]. Suctions drains are commonly used to evacuate them. These drains assist in monitoring of any collection in the closed cavity. Postoperative seroma formation occurs in 5.6% to 42% of cases when mesh is used in abdominal hernia repair [4].

There are multiple un-avoidable factors that contribute in seroma formation like excessive use of cautery, dissection in the plane below the Scarpa's fascia and use of sclerosants etc. This seroma, if gets infected and doesn't find its way to get drained leads to complications like wound infection and wound dehisces [5]. Multiple techniques are used by surgeons to minimize the risk of seroma formation and to prevent patient from future complications. Tranexamic acid can be administered orally or intravenously, but topical use is being reported increasingly. Topical application of tranexamic acid provides a high drug concentration at the site of the wound and a low

systemic concentration. Studies from cardiac and orthopedic surgery have shown an equal or superior effect of topical compared with intravenous tranexamic acid on both bleeding and transfusion requirement [6].

Objectives

The main objective of the study is to analyse the role of tranexamic acid in prevention of seroma formation after hernioplasty.

MATERIAL AND METHODS:

This cross sectional study was conducted in SIMS, Lahore during 2019 to 2020. The data was collected from 50 patients of hernioplasty. All the patients admitted from surgical OPD with the diagnosis of ventral abdominal hernia were included. Patients suffering from uncontrolled diabetes mellitus, cirrhosis, bleeding disorders and those with strangulated hernias were excluded. Patients taking anticoagulants were advised to stop that drug five days prior to surgery. A detailed clinical history was taken and examination performed. Anesthesia and surgery related laboratory investigations were carried out. Vacuum drain was placed to monitor the volume of seroma.

The data was collected and analysed using SPSS version 19. All the values were expressed in mean and standard deviation.

RESULTS:

The data was collected from 50 patients. In Group-1 (patients who received tranexamic acid postoperatively), out of 35-patients only 11-patients had total drain output of 300ml. In group-2 (patients who didn't receive tranexamic acid), out of 35-patients, 12-patients had drain output between 150-300ml and 23 had drain output >300ml.

Table 01: Seroma formation in both groups

Group	Drain output <150ml	Drain output 150-300ml	Drain output >300ml
A	34.5%	54.6%	15.9% 64.1%
B	0.1%	22.1%	

DISCUSSION:

Seromas are common and usually occur after different types of hernia repair especially those that are large and involve significant tissue disruption. The exact etiology of seroma formation remains controversial but it is considered to be the collection of liquefied fat, serum, inflammatory exudates and lymphatic fluid under skin flap [7]. The amount and duration of

seroma formation varies and influenced by many factors like extent of dissection and method of raising the skin flap such as electrocautery or knife. Untreated seromas commonly become infected. Seroma enormously enhances the chances of wound infection [8].

It is the good culture medium for the proliferation of bacteria and results in dangerous complications like wound dehiscence and septicemia. In our study seroma was common complication of hernia repair [9]. The studies done by other authors on the evaluation of risk factors that could lead to seroma formation showed no impact of age and gender on seroma formation [10].

CONCLUSION:

It is concluded that Tranexamic acid reduces post-operative seroma formation in patients with ventral hernia repair after mesh hernioplasty. It also reduces the total time of drain removal after surgery.

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