



ASSESSING THE ROLE OF OCTREOTIDE IN THE NON-OPERATIVE MANAGEMENT OF ENTEROCUTANEOUS FISTULAS

General Surgery

Dr.Bhumik K. Salvi*	Postgraduate, Department of General Surgery, Zydus medical college and Hospital, dahod, Gujrat*Corresponding Author
Dr. Shivangi Dangi	Assistant Professor, Department of General Surgery, Zydus medical college and Hospital, dahod, Gujrat
Dr.Kamlesh Gohil	Associate Professor, Department of General Surgery, Zydus medical college and Hospital, dahod, Gujrat
Dr.Shailesh Rathod	Professor and Head of Dept., Department of General Surgery, Zydus medical college and Hospital, dahod, Gujrat
Dr.Kartik L. Katariya	Postgraduate, Department of General Surgery, Zydus medical college and Hospital, dahod, Gujrat

ABSTRACT

BACKGROUND: This study is to evaluate the use of Octreotide which is a somatostatin analogue that can reduce gastrointestinal, pancreatic and biliary secretions as well as decrease gastrointestinal motility, in the conservative management of enterocutaneous fistulas. **AIM and OBJECTIVES:** The aim of this study is to analyze the effectiveness of Octreotide in adjunct with total parenteral nutrition in the management of enterocutaneous fistulas. **METHODS:** Medical records of 30 patients with postoperative enterocutaneous fistulas treated in our Department of General Surgery during the period from May 2024 to May 2025 were taken into consideration. Out of which 18 patients had duodenal fistulas, 12 patients had jejunal or ileal fistulas. Based on daily output, among the intestinal fistulas 22 were low output fistulas (<500ml/24hrs) and 8 were high output fistulas(> 500ml/24hrs). Octreotide was administered (100mcg, 8th hourly, subcutaneously or intravenously) along with nutritional support including total parenteral nutrition in 15 consecutive patients until spontaneous closure of fistula was seen. **RESULTS:** A mean reduction of 60% of fistula output was noted in the patients who received Octreotide in their treatment plan, within 24 hours of administration. Spontaneous closure of fistula was seen in 10 patients from Octreotide group (mean closure time is 14 days, range: 7-30days) and in 5 patients from non-Octreotide group treated only with total parenteral nutrition (mean closure time is 13days), which is not a significant result ($p=0.5$). Also, the fistula closure rate was not influenced by the anatomic site, output rate or age of the patient. **CONCLUSIONS:** This study finally concludes that though Octreotide rapidly reduces the fistula output when given in combination with total parenteral nutrition, thus, decreasing the hospital stay, complication rates and cost of treatment, but it doesn't significantly influence the spontaneous closure rate.

KEYWORDS

Octreotide, enterocutaneous fistula (ECF).

INTRODUCTION:

Patients with ECF commonly present with malnutrition, dehydration, wound infection, and sepsis. Historically, enterocutaneous fistulas were associated with prolonged hospital stays, significant morbidity, and high mortality rates. Despite considerable advances in critical care, nutritional support, and surgical techniques, mortality rates still range from approximately 3–22%, largely due to complications such as sepsis, electrolyte imbalance, and multi-organ dysfunction. ECFs can be classified according to:

- Etiology – spontaneous or postoperative
- Anatomical location – small bowel or large bowel origin
- Fistula output – based on the volume and nature of effluent

Spontaneous closure without surgical intervention remains the ideal outcome. However, several factors are associated with failure of spontaneous closure. These include distal obstruction, ongoing infection or abscess, presence of foreign body, open abdomen, epithelialized tract, multiple fistulous openings, short fistulous tract, jejunal origin, high-output fistula, and severe malnutrition.

The management of ECF follows a structured approach that includes:

1. Adequate nutritional support
2. Correction of fluid and electrolyte imbalances
3. Identification and control of sepsis
4. Accurate delineation of fistula anatomy
5. Timely surgical intervention when indicated

Octreotide, a synthetic somatostatin analogue, reduces gastrointestinal, pancreatic, and biliary secretions and decreases intestinal motility. It is frequently used as part of conservative management to reduce fistula output and potentially facilitate closure. Because spontaneous closure rates remain relatively low in many cases, surgical intervention is often required. Adjunctive therapies

such as vacuum-assisted wound closure (VAC), fibrin glue application, and somatostatin analogues have also been employed to enhance fistula healing and improve outcomes.

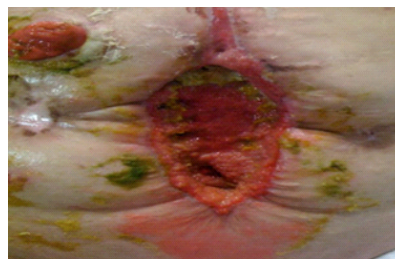


Figure 1: Post-operative ileal fistula

Aim

To evaluate the effectiveness of octreotide as an adjunct to total parenteral nutrition (TPN) in the conservative management of enterocutaneous fistulas.

Objectives

1. To assess the impact of octreotide combined with TPN on fistula output.
2. To evaluate the rate and time of spontaneous fistula closure.
3. To determine the effect on duration of hospital stay.
4. To assess associated complications and overall patient outcomes.

Materials and Methods

This prospective study was conducted in the Department between May 2024 and May 2025. A total of 30 patients diagnosed with postoperative enterocutaneous fistulas were included in the study.

Among the 30 patients, 3 had stomach fistula, 10 had duodenal

fistulas, while 9 had jejunal or ileal fistulas, 8 had colon fistula. Based on daily fistula output, 22 patients were classified as having low-output fistulas (<500 mL/24 hours), and 8 patients had high-output fistulas (>500 mL/24 hours).

Octreotide was administered to 15 consecutive patients at a dose of 100 mcg every 8 hours, either subcutaneously or intravenously. This was given in conjunction with comprehensive nutritional support, including total parenteral nutrition (TPN), and continued until spontaneous closure of the fistula was achieved.

Inclusion Criteria

Patients aged above 18 years diagnosed with enterocutaneous fistula (ECF) who were managed conservatively were included in this study. For each patient, medical records were reviewed and the following data were collected:

1. Origin of the fistula
2. Volume of fistula output
3. Etiology of the ECF
4. Duration of hospital stay
5. Type of therapy administered (total parenteral nutrition alone or octreotide in combination with total parenteral nutrition)
6. Use of total parenteral nutrition (TPN)
7. Use of somatostatin analogues
8. Use of antibiotics
9. Details of wound care management

Exclusion Criteria

Patients below 18 years of age and those who underwent surgical intervention without conservative management for fistula management were excluded from the study.

Results

In this study, a total of 30 patients were analyzed. The clinical and demographic characteristics of the patients were compared after dividing them into two groups:

- Group A: Patients receiving total parenteral nutrition (TPN) along with standard conservative management.
- Group B: Patients receiving octreotide as an adjunct to TPN along with standard conservative management.

Each group consisted of 15 patients.

Demographic Characteristics

In Group A, 12 patients were male and 3 were female. In Group B, 11 patients were male and 4 were female.

The age of patients ranged between 35 and 65 years. The mean age in Group A was 53.7 years, while in Group B it was 52 years.

Etiology of Fistula

In Group A:

- 13 patients had postoperative enterocutaneous fistulas.
- 2 patients had spontaneous or traumatic fistulas.

In Group B:

- 12 patients had postoperative fistulas.
- 3 patients had spontaneous or traumatic fistulas.

Table 1: Distribution based on fistula origin

CHARACTERISTICS	GROUP A	GROUP B
EC FISTULA-HIGH OUTPUT	3	5
EC FISTULA-LOW OUTPUT	12	10

Table 2: Distribution based on fistula output

CHARACTERISTICS	GROUP A	GROUP B
MEAN AGE (IN YEARS)	53.7	52
STOMACH	1	2
DUODEUM	5	5
JEJUNAL/ILEAL	5	4
COLON	4	4

Among the 30 patients included in the study, 15 patients were randomly selected to receive octreotide at a dose of 100 mcg every 8 hours, administered either subcutaneously or intravenously, in

addition to total parenteral nutrition and standard conservative management (Group B).

A mean reduction of 67% in fistula output was observed within 48 hours of initiating octreotide therapy.

Spontaneous Closure Rates

Spontaneous closure of the fistula was achieved in:

Group A (TPN alone): 6 out of 15 patients (40%)

- Mean closure time: 15 days
- Range: 10–40 days

Group B (Octreotide + TPN): 10 out of 15 patients (66.6%)

- Mean closure time: 13 days
- Range: 7–30 days

Although an early reduction in fistula output was noted in Group B, the overall mean time to spontaneous closure was comparable between the two groups.

Statistical analysis showed that the difference in spontaneous closure rates between Group A and Group B was not statistically significant ($p > 0.05$). This indicates that the addition of octreotide to total parenteral nutrition did not significantly improve spontaneous fistula closure rates.

Furthermore, fistula closure rates were not significantly influenced by anatomical site, fistula output category, or patient age.

DISCUSSION:

Enterocutaneous fistula (ECF) remains a challenging surgical condition requiring a multidisciplinary approach involving surgeons, intensivists, nutritionists, and wound care specialists. The reported spontaneous closure rates range from 17% to 45%, depending on various factors such as etiology, presence of free distal flow, fistula output, size of the enteric defect, epithelialization of the tract, and associated comorbidities.

Current management of ECF is carried out in a phased manner, which includes patient stabilization, appropriate investigations, decision-making regarding conservative versus surgical management, definitive surgical intervention when indicated, and postoperative care.

In recent years, newer modalities such as vacuum-assisted closure (VAC), fibrin glue application, total parenteral nutrition (TPN), and somatostatin analogues have been utilized to improve spontaneous closure rates and overall outcomes.

In the present study, 30 patients with enterocutaneous fistulas were analyzed and randomly divided into two groups based on the addition of octreotide to their treatment regimen. Among the 30 patients, 25 (83%) had postoperative fistulas, and Among the 30 patients 23 (76%) were male. These findings are consistent with existing literature, which reports that the majority of ECFs are of postoperative origin.

“Bowel rest” combined with TPN has been proposed to facilitate spontaneous fistula closure by reducing enteric secretions and decreasing fistula output.

All patients in this study were initially managed conservatively. Spontaneous closure was achieved in 16 patients (53.33%), while 10 patients (33.33%) required surgical intervention, and 4 patients succumbed to complications. Eight patients (40%) had high-output fistulas, while the remaining patients had low-output fistulas.

Octreotide was administered to 15 randomly selected patients. Among these, 10 patients (66.66%) achieved spontaneous closure, with a mean closure time of 13 days. In contrast, the group that did not receive octreotide had a spontaneous closure rate of 40% (6 patients), with a mean closure time of 15 days.

Although octreotide significantly reduced fistula output and contributed to a reduction in overall hospital stay, it did not significantly alter the mean time to spontaneous closure. Statistical analysis demonstrated that the difference in spontaneous closure rates between the two groups was not significant.

The findings of this study suggest that while octreotide rapidly decreases fistula output when administered alongside total parenteral nutrition—thereby potentially reducing hospital stay, complication rates, and overall treatment cost—it does not significantly improve spontaneous fistula closure rates.

These results are comparable to previous studies. Alivizatos V et al. reported that octreotide, when used as an adjunct to TPN, significantly reduces fistula output but does not have a substantial impact on spontaneous closure rates. Similarly, Martineau P et al. observed that octreotide decreases fistula output; however, its ability to shorten the time to fistula closure requires confirmation through well-designed comparative trials.

CONCLUSION

Octreotide, when used as an adjunct to standard conservative management of enterocutaneous fistula, effectively reduces fistula output in the early phase of treatment. This reduction may contribute to improved fluid and electrolyte balance, decreased complication rates, and potentially reduced overall mortality.

Although octreotide appears to lower hospital stay and assist in better clinical stabilization, its role in shortening the time to spontaneous closure of enterocutaneous fistula was not found to be statistically significant in the present study.

Therefore, while octreotide is beneficial in reducing fistula output and supporting conservative management, it does not significantly influence spontaneous fistula closure rates.

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