

**MULTICENTRE TRIAL TO ASSESS THE EFFICACY OF OCTREOTIDE IN THE  
MANAGEMENT OF ACUTE PANCREATITIS**

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**ABSTRACT**

**Introduction:** Acute pancreatitis is an inflammation and autodigestion of parenchyma of pancreas which lead to injury or destruction of acinar components. It can be initiated by factors, like gallstones, alcohol, trauma, and infections, etc. The mortality and morbidity of mild acute pancreatitis is low but patients with severe acute pancreatitis commonly develop complications and have a mortality of 10-50%, inspite of all available treatment strategies. Octreotide is a synthetic, a long acting octapeptide analogue of the native hormone somatostatin, became available in 1982. It is a powerful inhibitor of basal and stimulated exocrine pancreatic secretion in healthy volunteers and can be given subcutaneously. Octreotide have been shown to inhibit both pancreatic endocrine and exocrine function. This study has been conducted to study the etiology of acute pancreatitis and to see the role of octreotide in management of acute pancreatitis. **Materials and methods:** This is a prospective study consisting of two groups of 25 patients each. One group was treated with octreotide whereas the other group was treated without injection octreotide. Both the groups received antibiotics, analgesics, fluid support in addition. Response was assessed on the sequential assessment of serum amylase, serum lipase and abdominal ultrasound. **Results:** Results were analysed in view of age distribution, gender distribution, clinical features, etiology, biochemical response and radiological response. Statistical software was used to see the statistical significance in comparison. **Discussion:** Results of the present study was compared with the existing literature on acute pancreatitis, etiological factors and role of octreotide. **Conclusion:** This study was undertaken to see the etiology of acute pancreatitis and the effect of subcutaneous octreotide on the serum levels of amylase and lipase in patients with acute pancreatitis. The idea was to see if octreotide can significantly reduce the high levels of serum amylase and lipase in patients with acute pancreatitis. Subcutaneous octreotide reduced the levels of both the enzymes in all cases. So it can be stated that subcutaneous injection of octreotide can be used in the management strategy of acute pancreatitis. It helps in preventing the enzyme related damage to the pancreas.

**KEYWORDS:** Acute pancreatitis, serum amylase, serum lipase, octreotide.

**INTRODUCTION**

Acute pancreatitis is an inflammation and autodigestion of parenchyma of pancreas which lead to injury or destruction of acinar components. It can be initiated by factors, like gallstones, alcohol, trauma and infections, etc. It can be hereditary too. Acute pancreatitis is classified into mild and severe forms.<sup>[1]</sup> Majority of patients suffer from mild acute pancreatitis, a self limiting disease, which responds well to conservative treatment. In up to 20% of patients with acute pancreatitis, however, the disease progresses to a severe form involving both pancreatic and extrapancreatic necrosis. The mortality and morbidity of mild acute pancreatitis is low but patients with severe acute pancreatitis commonly develop complications and have a mortality of 10-50%, inspite of all available treatment

strategies.<sup>[2-8]</sup> The generally prevalent belief today is that pancreatitis begins with the activation of digestive zymogens inside acinar cells, which cause acinar cell injury. The diagnosis of acute pancreatitis can be made when a patient presents with atleast three fold elevated serum levels of amylase or lipase. Activated pancreatic enzymes seem to be involved in the generation and progression of this "autodigestive" acute inflammatory disease, and it was therefore hypothesized that the administration of somatostatin or its analogue octreotide might help prevent progression of the disease and its complications. This approach is somewhat controversial; however, as it is not clear whether pancreatic secretion continues to occur during the course of acute pancreatitis. Animal studies show an appreciable

reduction of secretion in the inflamed pancreas, but studies in humans are not conclusive.<sup>[9]</sup>

Octreotide is a synthetic, a long acting octapeptide analogue of the native hormone somatostatin, became available in 1982. It is a powerful inhibitor of basal and stimulated exocrine pancreatic secretion in healthy volunteers and can be given subcutaneously. Octreotide have been shown to inhibit both pancreatic endocrine and exocrine function.<sup>[9]</sup> Few literature support the use of octreotide in the management of acute pancreatitis whereas few say that there is no significant role of octreotide. Also there are studies concluding that octreotide is only worth using in acute pancreatitis management if used in higher doses. We were thus encouraged to evaluate the efficacy of this drug in our study. This is a prospective study to assess the etiology of acute pancreatitis and the role of octreotide in patients admitted with diagnosis of acute pancreatitis.

#### MATERIAL AND METHODS

- **Type of study:** Prospective study
- **Place of study:** This is a multicenter based study including patients from AVBR Hospital (Wardha), MGIMS (Sevagram), IGGMC (Nagpur), BJMC (Pune).
- **Sample size:** 50
  - Patients suffering from Acute Pancreatitis who were admitted in surgical wards were included in our study. All the patients admitted with diagnosis of acute pancreatitis were included in this study.
  - We have considered two groups of 25 patients each. One group of 25 patients have been treated with Injection Octreotide (somatostatin analogue) with the dose of, 200 micrograms, subcutaneously, 8 hourly for 7 days over arm or gluteal region whereas the other group was managed without Injection Octreotide (placebo).
  - All patients in both the groups were treated with antibiotic, analgesic, fluid support in common.
  - Sequential assessment of response was done using serum amylase, serum lipase and abdominal ultrasonography.

The results of the present study are as follows

**Table 1: Age wise distribution of patients.**

		Group		Total	P value
		Non-octreotide	Octreotide		
Age	1) ≤20	3 (12.00%)	1 (4.00%)	4 (8.00%)	0.600
	2) 21-30	9 (36.00%)	6 (24.00%)	15 (30.00%)	
	3) 31-40	8 (32.00%)	9 (36.00%)	17 (34.00%)	
	4) 41-50	3 (12.00%)	6 (24.00%)	9 (18.00%)	
	5) 51-60	2 (8.00%)	2 (8.00%)	4 (8.00%)	
	6) 61-70	0 (0.00%)	1 (4.00%)	1 (2.00%)	
Total		25 (100.00%)	25 (100.00%)	50 (100.00%)	

#### • Inclusion criteria

- Patients of either sex of age between 15-70 years.
- Patients with clinical features of Acute Pancreatitis.
- Patients willing to give informed consent.

#### • Exclusion criteria

- a. Patients with abdominal pain other than Acute Pancreatitis.
- b. Patients not willing to give informed consent.
- c. Age under 15 years and above 70 years.

#### STATISTICAL ANALYSIS

Categorical variables were presented in number and percentage (%) and continuous variables were presented as mean ± SD and median. Normality of data was tested by Kolmogorov-Smirnov test. If the normality was rejected then non parametric test was used.

Statistical tests were applied as follows-

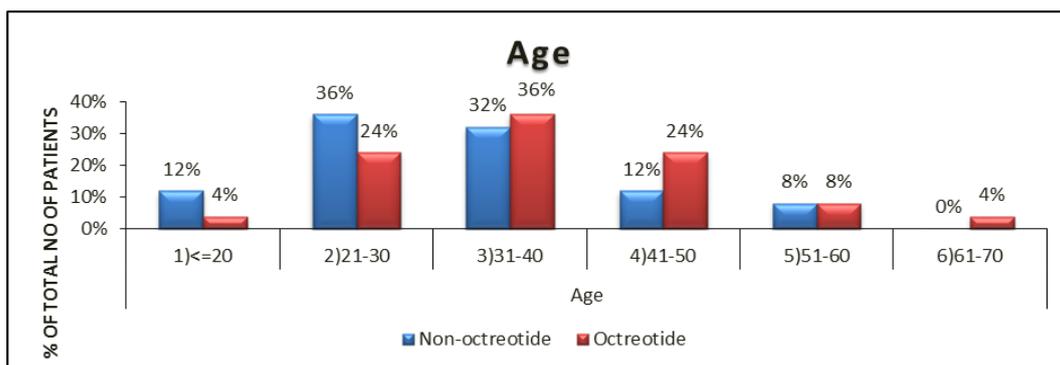
1. Quantitative variables were compared using Unpaired t-test/Mann-Whitney Test (when the data sets were not normally distributed) between the two groups.
2. Qualitative variables were correlated using Chi-Square test /Fisher's exact test.

A p value of <0.05 was considered statistically significant.

The data was entered in MS EXCEL spreadsheet and analysis was done using Statistical Package for Social Sciences (SPSS) version 21.0.

#### RESULTS AND OBSERVATIONS

The study comprises of total 50 patients who were divided in two groups of 25 patients each. One group was treated with Injection Octreotide whereas the other group of 25 patients were treated without Injection Octreotide.



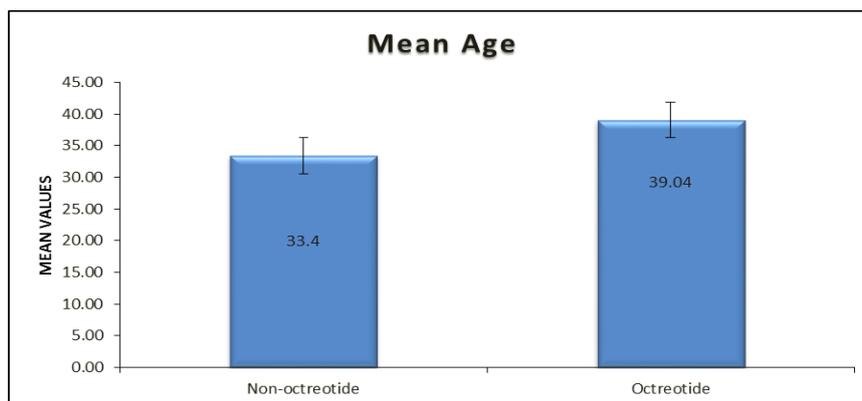
A total of 20 patients were of age between 20-50 years in the non octreotide group whereas in the octreotide group a total of 21 patients were of age between 20-50 years.

In the non octreotide group there were 3 patients below 20 years and 2 patients above 50 years.

In the octreotide group there was 1 patient below 20 years and 3 patients above 50 years.

Table Showing mean age values.

	Non-octreotide	Octreotide	P value
<b>Age</b>			.105
Sample size	25	25	
Mean ± Stdev	33.4 ± 11.17	39.04 ± 12.93	
Median	32	38	
Min-Max	16-60	17-70	
Inter quartile Range	25 - 40	30 - 46.250	

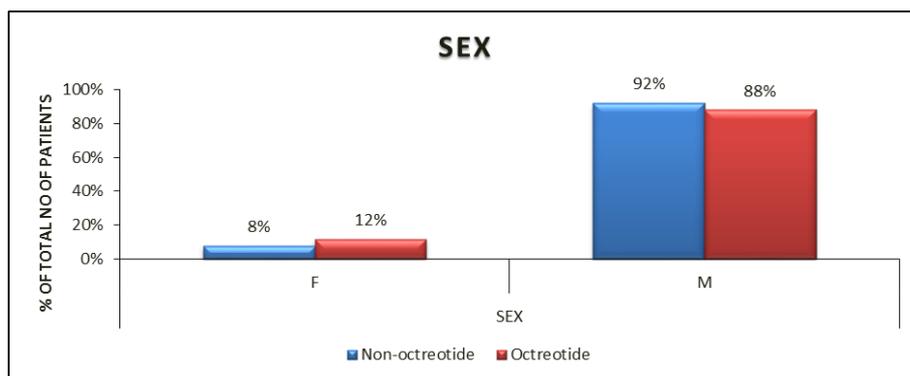


Graph showing mean age in the two groups.

The mean age in the non-octreotide group was 33.4 years and in the octreotide group was 39.04 years.

Table 2: Genderwise distribution of patients.

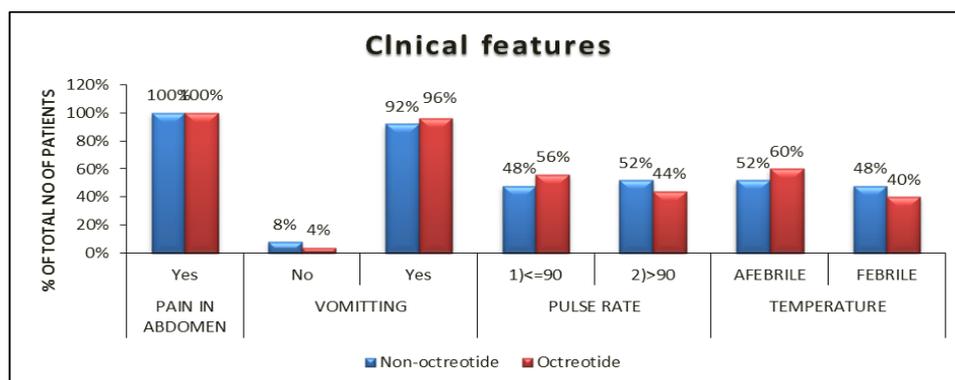
		Group		Total	P value
		Non-octreotide	Octreotide		
SEX	F	2 (8.00%)	3 (12.00%)	5 (10.00%)	1.000
	M	23 (92.00%)	22 (88.00%)	45 (90.00%)	
Total		25 (100.00%)	25 (100.00%)	50 (100.00%)	



Majority of the patients in both the groups were male. There were 23 male patients in the non-octreotide group and 22 male patients in the octreotide group.

**Table 3: Clinical features.**

		Group		Total	P value
		Non-octreotide	Octreotide		
Pain in abdomen	Yes	25 (100.00%)	25 (100.00%)	50 (100.00%)	-
	No	2 (8.00%)	1 (4.00%)	3 (6.00%)	
Vomitting	Yes	23 (92.00%)	24 (96.00%)	47 (94.00%)	1.000
	No	2 (8.00%)	1 (4.00%)	3 (6.00%)	
Pulse rate	1) ≤90	12 (48.00%)	14 (56.00%)	26 (52.00%)	0.571
	2) >90	13 (52.00%)	11 (44.00%)	24 (48.00%)	
Temperature	AFEBRILE	13 (52.00%)	15 (60.00%)	28 (56.00%)	0.569
	FEBRILE	12 (48.00%)	10 (40.00%)	22 (44.00%)	
Total		25 (100.00%)	25 (100.00%)	50 (100.00%)	



Pain in abdomen was present in all patients in both the groups on presentation.

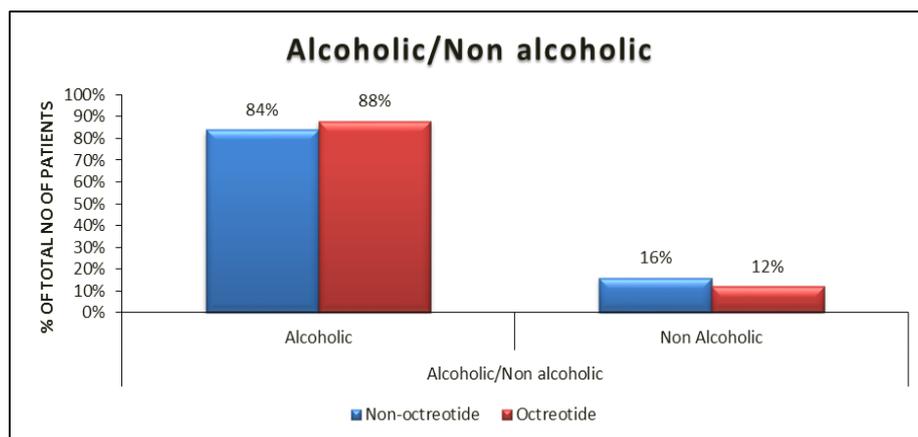
Tachycardia was present in 13 patients in non-octreotide group and 11 patients in octreotide group.

Vomitting was present in 23 patients in non-octreotide group and 24 patients in octreotide group.

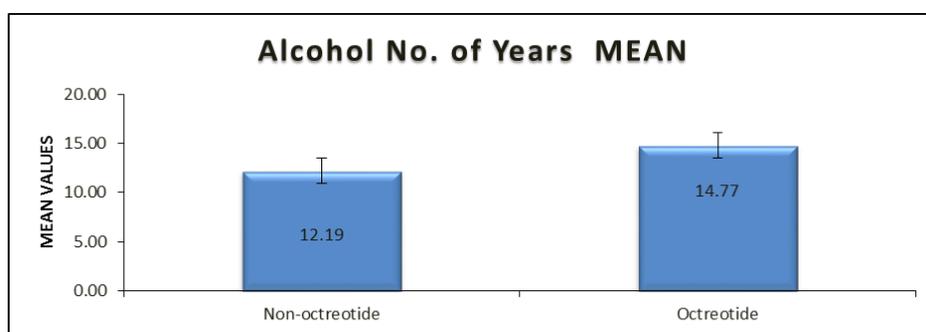
12 patients in the non-octreotide group were febrile on presentation whereas in the octreotide group there were 10 patients who were febrile.

**Table 4: Distribution of alcoholic patients.**

		Group		Total	P value
		Non-octreotide	Octreotide		
Alcoholic/Non alcoholic	Alcoholic	21 (84.00%)	22 (88.00%)	43 (86.00%)	1.000
	Non Alcoholic	4 (16.00%)	3 (12.00%)	7 (14.00%)	
Total		25 (100.00%)	25 (100.00%)	50 (100.00%)	



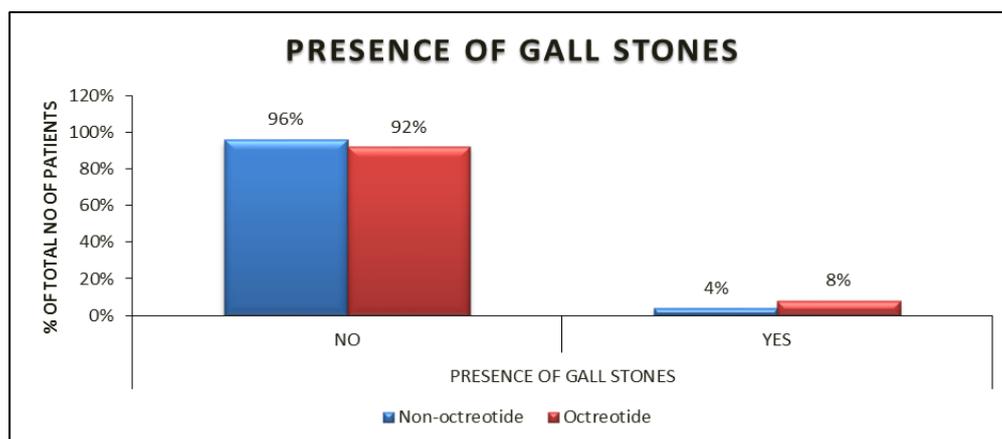
There were 21 patients in non-octreotide group with significant alcohol intake history whereas in the octreotide group there were 22 patients who had significant alcohol intake history.



The mean value of number of years of alcohol intake in the non-octreotide group was 12.19 years and that in the Octreotide group was 14.77 years.

**Table 5: Distribution of patients with Gall stones.**

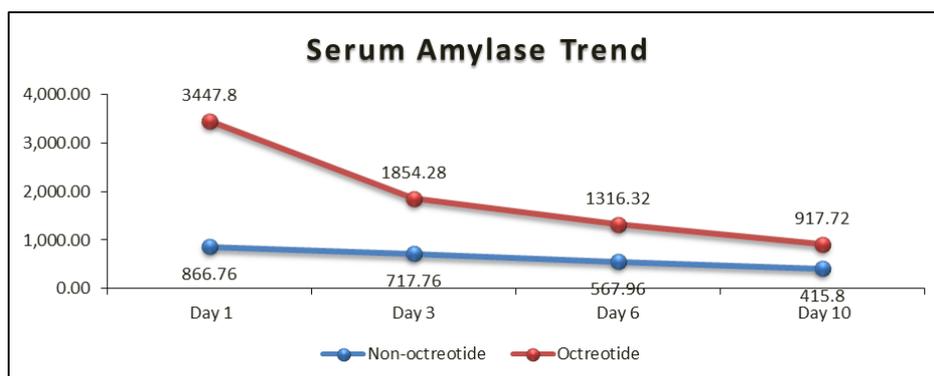
		Group		Total	P value
		Non-octreotide	Octreotide		
Presence of gall stones	No	24 (96.00%)	23 (92.00%)	47 (94.00%)	1.000
	Yes	1 (4.00%)	2 (8.00%)	3 (6.00%)	
Total		25 (100.00%)	25 (100.00%)	50 (100.00%)	



1 patient in the non-octreotide group and 2 patients in the octreotide group had the presence of gall stones.

**Table 6: Observations of serum amylase values.**

Serum Amylase Day 1	Non-octreotide	Octreotide	
Sample size	25	25	0.877
Mean ± Stdev	866.76 ± 374.58	3447.8 ± 10443.01	
Median	782	780	
Min-Max	502-1984	482-52588	
Inter quartile Range	597 - 992.500	561.750 - 1545.500	
<b>Serum Amylase Day 3</b>			
Sample size	25	25	0.362
Mean ± Stdev	717.76 ± 298.76	1854.28 ± 5650.49	
Median	634	580	
Min-Max	402-1664	320-28880	
Inter quartile Range	499 - 820	441.500 - 784	
<b>Serum Amylase Day 6</b>			
Sample size	25	25	0.184
Mean ± Stdev	567.96 ± 211.93	1316.32 ± 4088.75	
Median	512	402	
Min-Max	319-998	221-20907	
Inter quartile Range	402.500 - 666.500	335.750 - 666	
<b>Serum Amylase Day 10</b>			
Sample size	25	25	0.035
Mean ± Stdev	415.8 ± 170.66	917.72 ± 3000.15	
Median	380	280	
Min-Max	192-808	140-15300	
Inter quartile Range	291.250 - 498.250	202 - 411.500	

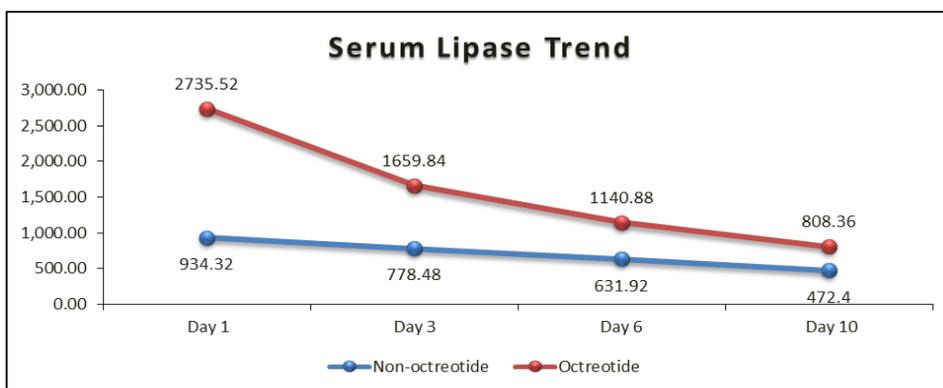


**Comparitive graph showing mean serum amylase values.**

**Table 7: Observation of serum lipase values.**

Serum Lipase Day 1	Non-octreotide	Octreotide	
Sample size	25	25	0.151
Mean ± Stdev	934.32 ± 425.51	2735.52 ± 5269.1	
Median	804	904	
Min-Max	488-2040	583-26818	
Inter quartile Range	684 - 962.500	699 - 3086	
<b>Serum Lipase Day 3</b>			
Sample size	25	25	0.628
Mean ± Stdev	778.48 ± 346.78	1659.84 ± 3604.1	
Median	682	662	
Min-Max	391-1690	386-18708	
Inter quartile Range	556.750 - 802.500	564.500 - 1594.750	
<b>Serum Lipase Day 6</b>			
Sample size	25	25	0.823
Mean ± Stdev	631.92 ± 267.08	1140.88 ± 2414.42	
Median	587	562	
Min-Max	304-1290	284-12606	

Inter quartile Range	436.250 - 688.500	415.750 - 995.250	0.367
<b>Serum Lipase Day 10</b>			
Sample size	25	25	
Mean ± Stdev	472.4 ± 223.75	808.36 ± 1887.49	
Median	449	382	
Min-Max	202-998	168-9809	
Inter quartile Range	296.500 - 521.500	288.750 - 493.500	



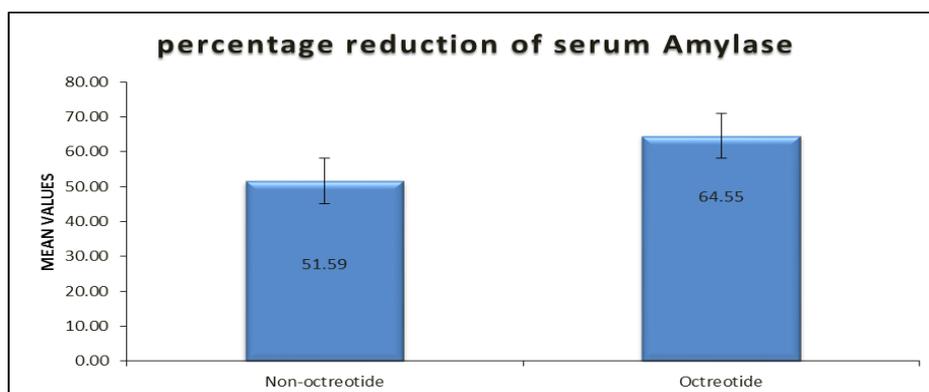
Comparitive graph showing mean serum lipase values

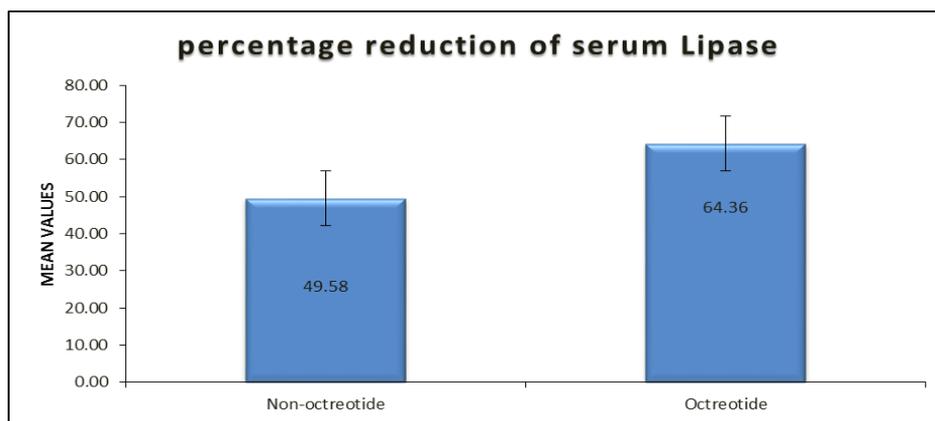
Table showing mean percentage reduction of serum amylase and serum lipase.

	Group		P value
	Non-octreotide	Octreotide	
<b>percentage reduction of serum Amylase</b>			0.0003
Sample size	25	25	
Mean ± Stdev	51.59 ± 7.43	64.55 ± 14.12	
Median	51.09	65.56	
Min-Max	36.7-64.52	38.2-98.16	
Inter quartile Range	48.118 - 56.761	55.751 - 71.935	
<b>percentage reduction of serum Lipase</b>			0.0001
Sample size	25	25	
Mean ± Stdev	49.58 ± 8.96	64.36 ± 14.78	
Median	50.37	62.99	
Min-Max	31.44-66.92	27.94-96.26	
Inter quartile Range	43.803 - 55.678	56.338 - 74.433	

Table showing percentage reduction of serum amylase and serum lipase.

	Group	
	Non-octreotide	Octreotide
<b>percentage reduction of serum Amylase</b>	51.59	64.55
<b>percentage reduction of serum Lipase</b>	49.58	64.36

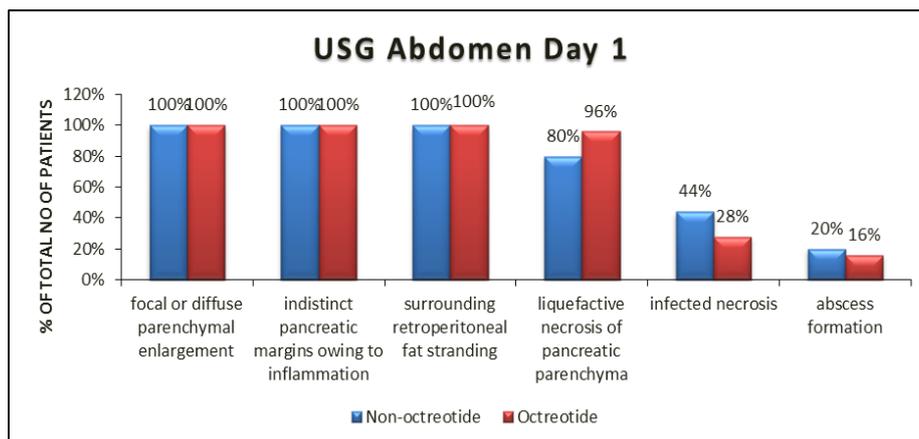




Graphs showing percentage reduction of serum amylase and serum lipase.

Table 8: Ultrasound abdomen features on Day – 1.

	Group		Total	P value
	Non-octreotide	Octreotide		
focal or diffuse parenchymal enlargement	25 (100.00%)	25 (100.00%)	50 (100.00%)	-
indistinct pancreatic margins owing to inflammation	25 (100.00%)	25 (100.00%)	50 (100.00%)	-
surrounding retroperitoneal fat stranding	25 (100.00%)	25 (100.00%)	50 (100.00%)	-
liquefactive necrosis of pancreatic parenchyma	20 (80.00%)	24 (96.00%)	44 (88.00%)	0.189
infected necrosis	11 (44.00%)	7 (28.00%)	18 (36.00%)	0.239
abscess formation	5 (20.00%)	4 (16.00%)	9 (18.00%)	1.000



All patients in both the non-octreotide and octreotide group had features of focal or diffuse parenchymal enlargement, indistinct pancreatic margins owing to inflammation and surrounding retroperitoneal fat stranding.

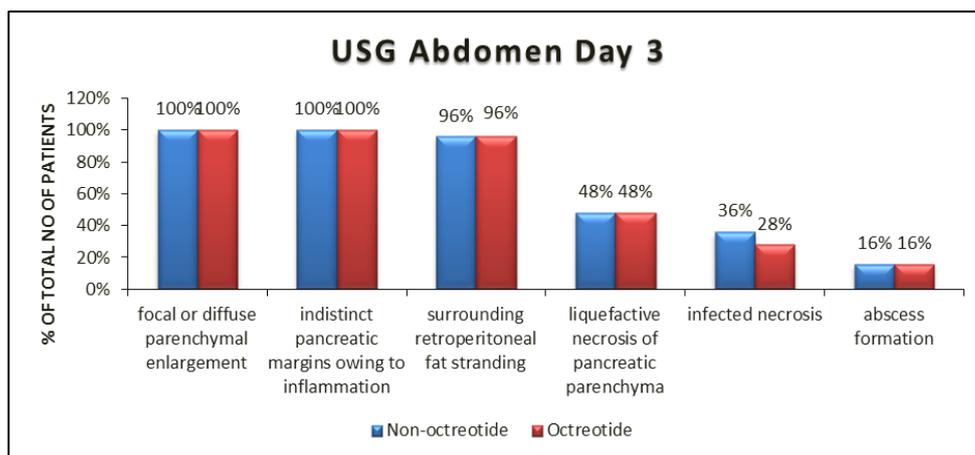
20 patients in non octreotide group and 24 patients in octreotide group had features of liquefactive necrosis of pancreatic parenchyma.

11 patients in non-octreotide group and 7 patients in octreotide group had features of infected necrosis.

5 patients in non-octreotide group and 4 patients in octreotide group showed abscess formation on abdominal ultrasound scan.

Table 9: Ultrasound abdomen features on Day – 3.

	Group		Total	P value
	Non-octreotide	Octreotide		
focal or diffuse parenchymal enlargement	25 (100.00%)	25 (100.00%)	50 (100.00%)	-
indistinct pancreatic margins owing to inflammation	25 (100.00%)	25 (100.00%)	50 (100.00%)	-
surrounding retroperitoneal fat stranding	24 (96.00%)	24 (96.00%)	48 (96.00%)	1.000
liquefactive necrosis of pancreatic parenchyma	12 (48.00%)	12 (48.00%)	24 (48.00%)	1.000
infected necrosis	9 (36.00%)	7 (28.00%)	16 (32.00%)	0.544
abscess formation	4 (16.00%)	4 (16.00%)	8 (16.00%)	1.000



All patients in both the groups showed features of focal or diffuse parenchymal enlargement and indistinct pancreatic margins owing to inflammation on Day 3.

24 patients in both the groups showed features of surrounding retroperitoneal fat stranding.

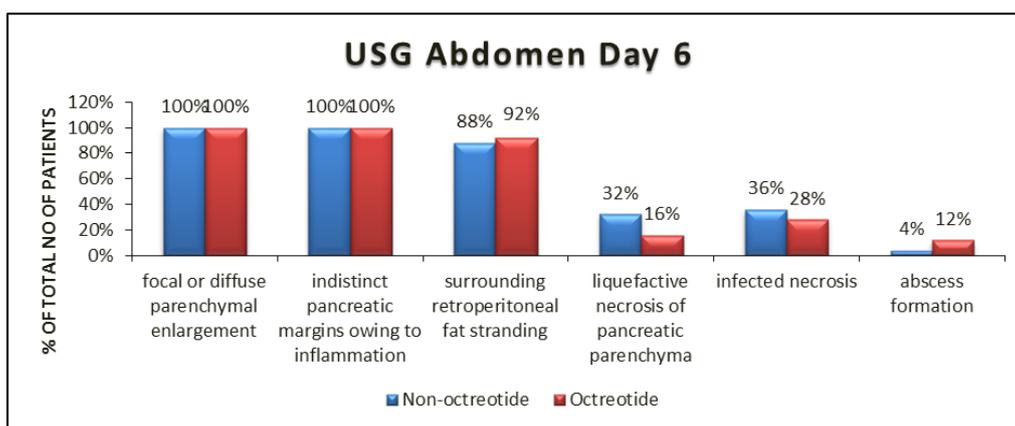
12 patients in both the groups showed features of liquefactive necrosis of pancreatic parenchyma.

9 patients in non-octreotide group and 7 patients in octreotide group showed features of infected necrosis.

4 patients in both the groups showed features of abscess formation.

**Table 10: Ultrasound abdomen features on Day – 6.**

	Group		Total	P value
	Non-octreotide	Octreotide		
focal or diffuse parenchymal enlargement	25 (100.00%)	25 (100.00%)	50 (100.00%)	-
indistinct pancreatic margins owing to inflammation	25 (100.00%)	25 (100.00%)	50 (100.00%)	-
surrounding retroperitoneal fat stranding	22 (88.00%)	23 (92.00%)	45 (90.00%)	1.000
liquefactive necrosis of pancreatic parenchyma	8 (32.00%)	4 (16.00%)	12 (24.00%)	0.321
infected necrosis	9 (36.00%)	7 (28.00%)	16 (32.00%)	0.544
abscess formation	1 (4.00%)	3 (12.00%)	4 (8.00%)	0.609



All patients in both the groups showed features of focal or diffuse parenchymal enlargement and indistinct pancreatic margins owing to inflammation.

22 patients in non-octreotide group and 23 patients in octreotide group showed features of surrounding retroperitoneal fat stranding.

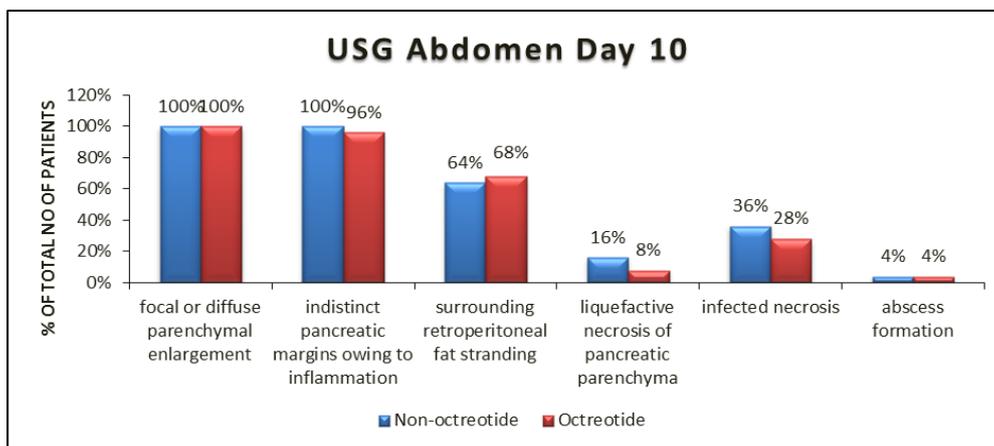
8 patients in non-octreotide group and 4 patients in octreotide group showed features of liquefactive necrosis of pancreatic parenchyma.

9 patients in non-octreotide group and 7 patients in octreotide group showed features of infected necrosis.

1 patient in non-octreotide group and 3 patients in octreotide group showed features of abscess formation.

**Table 11: Ultrasound abdomen features on Day – 10.**

	Group		Total	P value
	Non-octreotide	Octreotide		
focal or diffuse parenchymal enlargement	25 (100.00%)	25 (100.00%)	50 (100.00%)	-
indistinct pancreatic margins owing to inflammation	25 (100.00%)	24 (96.00%)	49 (98.00%)	1.000
surrounding retroperitoneal fat stranding	16 (64.00%)	17 (68.00%)	33 (66.00%)	0.765
liquefactive necrosis of pancreatic parenchyma	4 (16.00%)	2 (8.00%)	6 (12.00%)	0.667
infected necrosis	9 (36.00%)	7 (28.00%)	16 (32.00%)	0.544
abscess formation	1 (4.00%)	1 (4.00%)	2 (4.00%)	1.000



All patients in both the groups showed features of focal or diffuse parenchymal enlargement.

All patients in non-octreotide group and 24 patients in octreotide group showed features of indistinct pancreatic margins owing to inflammation.

16 patients in non-octreotide group and 17 patients in octreotide group showed features of surrounding retroperitoneal fat stranding.

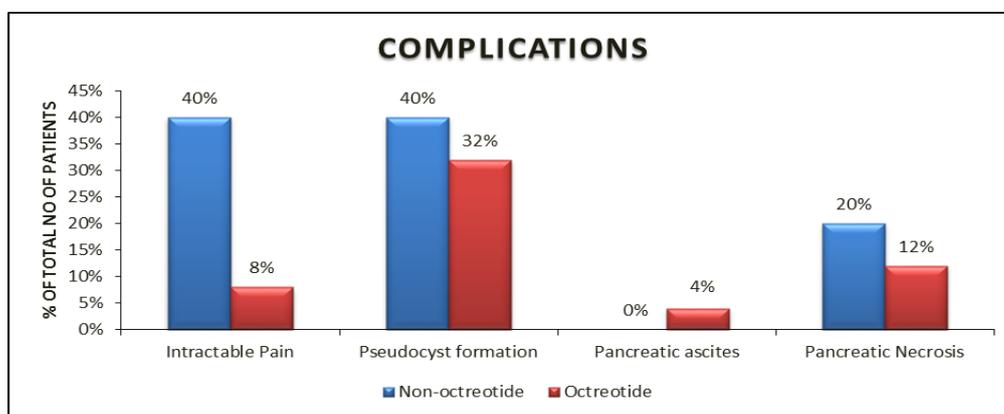
4 and 2 patients in non-octreotide and octreotide group respectively showed features of liquefactive necrosis of pancreatic parenchyma.

9 patients in non-octreotide group and 7 patients in octreotide group showed features of infected necrosis.

1 patient in each group showed features of abscess formation.

**Table 12: Complications.**

	Group		Total	P value
	Non-octreotide	Octreotide		
Intractable Pain	10 (40.00%)	2 (8.00%)	12 (24.00%)	0.018
Pseudocyst formation	10 (40.00%)	8 (32.00%)	18 (36.00%)	0.556
Pancreatic ascites	0 (0.00%)	1 (4.00%)	1 (2.00%)	1.000
Pancreatic Necrosis	5 (20.00%)	3 (12.00%)	8 (16.00%)	0.702



Shows the various complications noted in the patients.

10 patients in non-octreotide group and 2 patients in octreotide group had intractable pain. 10 patients in non-octreotide group and 8 patients in octreotide group showed pseudocyst formation. Only 1 patient in octreotide group developed pancreatic ascites. 5 patients in non-octreotide group and 3 patients in octreotide group showed pancreatic necrosis.

## DISCUSSION

**In the present study**, the age in the non-octreotide ranged from 16-60 years and the age in the octreotide group ranged from 17-70 years. The mean age in the non-octreotide group was 33.4 years and that in the octreotide group was 39.04 years.

**Ozkan Karakoyunlar et al**<sup>[11]</sup> in a study on 43 patients with age ranging from 24-86 years found the mean to be 57.03 years

**Uhl et al**<sup>[10]</sup> in a study on 302 patients with age ranging from 18-93 years found the mean age as 50 years.

**Paran et al**<sup>[16]</sup> did a study on 50 patients with age ranging from 43-67 years with a mean age value of 55 years.

**Garg et al**<sup>[17]</sup> did a study on 169 patients with age ranging from 15-80 years. The mean age in their study was 41.3 years.

**Nippon R et al**<sup>[18]</sup> conducted a study on 1688 patients with age ranging from 13-79 years and found the mean age as 62 years.

**Ganguly Narendra N et al**<sup>[15]</sup> did a study on 100 patients, age ranging from 15-74 years and found the mean age as 36.9 years.

**In the present study**, male preponderance was seen with male: female ratio as 9:1. There were total of 45 male patients and 5 female patients including both the groups. Our study is based in a rural set-up wherein the incidence is much more in males as compared to females.

**Uhl et al**<sup>[10]</sup> did a study on 302 patients and found a male: female ratio as 1.9:1. The study consisted 198 males and 104 females.

**Garg et al**<sup>[17]</sup> in a study on 169 patients found the male: female ratio as 2.1:1. The study had 116 males and 53 females.

**Nippon R et al**<sup>[18]</sup> did a study on 1688 patients consisting of 1047 males and 641 females. The male: female ratio was found to be 1.6:1.

**Ganguly Narendra N et al**<sup>[15]</sup> in a study on 100 patients which included 63 males and 37 females, found the male: female ratio as 1.7:1.

**In the present study**, pain in abdomen was found in 100% of patients on presentation, complaints of vomiting was found in a total of 47 patients (94%), 22 patients in total (44%) were febrile on presentation.

**George C Nikou et al**<sup>[13]</sup> did a study on 120 patients (100%) in which epigastric pain was noted in all 120 patients, vomiting was noted in 87 patients (72.5%), fever was present 53 patients (44.2%).

**In the present study**, there were 43 alcoholic patients (86%), mean number of years of alcohol intake in the non-octreotide group was 12.19 years and mean number of years of alcohol intake in the octreotide group was 14.77 years. There were in total 3 patients (6%) with presence of gall stones and 41 patients in total (82%) who had history of spicy food intake.

**Uhl et al**<sup>[10]</sup> in their study on 302 patients found alcohol as a cause of acute pancreatitis in 126 patients (42%). Gall stones was found as a cause in 111 patients (37%).

**Dhanwant Gomez et al**<sup>[14]</sup> conducted a study on 117 patients of acute pancreatitis. Gall stones was found to be the cause in 51 patients. Alcohol was the cause in 22 patients. Other causes included 44 patients.

**P G Lankisch et al**<sup>[12]</sup> did a study on 284 patients and found the cause of acute pancreatitis to be biliary in 114 patients (40%), alcohol abuse in 83 patients (29%) and unknown cause in 66 patients (23%).

**George C Nikou et al**<sup>[13]</sup> in their study on 120 patients found gall stones to be the cause in 81 patients (67.5%), alcohol to be the cause in 25 patients (20.8 %).

**Ganguly Narendra N et al**<sup>[15]</sup> in their study consisting of 100 patients found gall stones to be the cause in 56% of cases. Alcohol abuse was the second most common cause with 32% of cases. In 8% of cases no cause could be determined. Helmenthiasis was found to be the cause in 2% of cases and trauma was found to be the cause in 1% of cases.

The present study is based in a rural set-up wherein there is high incidence of alcohol abuse and alcohol is found to be the most common cause of acute pancreatitis in the present study.

**In the present study**, the mean percentage reduction of serum amylase in the non-octreotide group was found to be 51.59% whereas the mean percentage reduction of serum amylase in the octreotide group was found to be 64.55%.

Similarly, the mean percentage reduction of serum lipase in non-octreotide group was found to be 49.58% whereas the mean percentage reduction of serum lipase in the octreotide group was found to be 64.36%

The statistical significance for the mean percentage reduction of serum amylase and serum lipase for both the groups in the present study was determined and was found to be significant. P value for mean percentage reduction of serum amylase was found to be 0.0003 and the p value for mean percentage reduction of serum lipase was found to be 0.0001.

**W Uhl et al**<sup>[10]</sup> in 1999 conducted a randomised double blind multicentre trial of octreotide in moderate to severe acute pancreatitis. The study consisted of 302 patients who were divided into 3 groups receiving placebo, octreotide 100 micrograms (O1) and octreotide 200 micrograms (O2) subcutaneously three times a day for 7 days. Conclusion of this study showed no benefit of octreotide in the treatment of acute pancreatitis.

**Ozkan Karakoyunlar et al**<sup>[11]</sup> studied 43 patients with a diagnosis of acute pancreatitis treated with high dose octreotide 0.5 mcg/kg/hr by continued intravenous infusion and found that the decrease in serum amylase was significantly more pronounced in the octreotide treated group ( $p < 0.000$  with t-test for paired samples;  $p = 0.0004$  with Mann-Whitney U test).

**George C Nikou et al**<sup>[13]</sup> in 2001 did a study to see the significance of dosage adjustment of octreotide in the treatment of acute pancreatitis of moderate severity and concluded that the subcutaneous administration of octreotide in acute pancreatitis of moderate severity might be of little benefit only at a dose of 200 micrograms 8 hourly or 300 micrograms 8 hourly for atleast 7 days.

**Ganguly Narendra N et al**<sup>[15]</sup> in their study on 100 cases of acute pancreatitis concluded that the difference between Group A (treated with injection octreotide 100 micrograms 8 hourly) and Group B (treated without injection octreotide) was found to be statistically significant for both serum amylase ( $p = 0.0028$ ) and serum lipase ( $p = 0.0437$ ) by Ttest and ( $p = 0.00798$  and  $p = 0.0437$ ) by Mann-Whitney U test respectively. They stated that octreotide use for treatment of acute pancreatitis may help reduce the enzyme related damage.

## CONCLUSION

This study was undertaken to see the etiology of acute pancreatitis in our rural set up and the effect of subcutaneous octreotide on the serum levels of amylase and lipase in patients with acute pancreatitis. The idea was to see if octreotide can significantly reduce the high levels of serum amylase and lipase in patients with acute pancreatitis. Subcutaneous octreotide reduced the levels of both the enzymes in all cases. So it can be stated that subcutaneous injection of octreotide can be used in the management strategy of acute pancreatitis. It helps in preventing the enzyme related damage to the pancreas.

(**Note:** One of the author has been in service at multiple institutions (IGGMC, MGIMS, AVBRH). He is currently working as Professor, Department of Surgery, AVBRH).

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