Specificity of Lipase & Amylase Separately, in Alcoholic & Non-Alcoholic Pancreatitis

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ABSTRACT

BACKGROUND

Clinically, the course of all causes of acute pancreatitis is similar; however, in-patients with severe biliary pancreatitis, we can prevent complications with the help of ERCP. Serum L / A ratio of > 2 could help diagnose alcohol as the causative agent[1]. Hence, our study aims at assessing the validity in Government Medical College, Thiruvananthapuram, after assessing the specificity and sensitivity of amylase and lipase in alcoholic and non-alcoholic patients separately and lipase amylase ratio as an indicator to distinguish acute alcoholic from non-alcoholic pancreatitis. We also wanted to study the prevalence of pancreatitis in age group of 20 - 40.

METHODS

This is a diagnostic test evaluation conducted among 92 inpatients of Department of General Surgery selected through consecutive sampling. After randomly selecting patients admitted with a provisional diagnosis of acute pancreatitis, the first investigator administered the consent form, if accepted, examined the patient, evaluated the laboratory parameters. Then these patients were prospectively followed and evaluated. Data are then analysed using Excel spread sheet version 2019 and SPSS software and sensitivity, specificity, prevalence and diagnostic accuracy were determined.

RESULTS

Among 92 patients, 80 (87 %), 55 (58.8%) and 25 (27.2%) were found to have pancreatitis, alcoholic and non-alcoholic causes respectively. 35 (38 %) patients were in the age group of 31 – 35 years. It was found that lipase has 94.55 % & 91.6 % sensitivity and specificity in alcoholic and 84 % & 91.6 % sensitivity and specificity in non-alcoholic pancreatitis patients, respectively, and amylase has 69 % & 91.67 % sensitivity and specificity in alcoholic and 72 % & 91.67 % sensitivity and specificity in non-alcoholic pancreatitis respectively.

CONCLUSIONS

Serum amylase and lipase are inevitable investigations with good sensitivity and specificity in the diagnosis of acute pancreatitis. Lipase amylase ratio >2 is diagnostic of alcoholic pancreatitis.

KEYWORDS

Acute Pancreatitis, Acute Alcoholic Pancreatitis, Acute Non-Alcoholic Pancreatitis, Specificity of Lipase and Amylase, Lipase Amylase Ratio

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BACKGROUND

Acute pancreatitis is the inflammation of pancreas. There are multiple aetiological factors for this. Among them 70 % - 80 % are due to alcohol[2] abuse and common bile duct obstruction with gallstones.[3] Now a days its incidence is increasing.[4] Pancreatitis became as one of the most common causes of hospital admission for gastrointestinal illness.[5] Even though most of them are milder cases, which respond to conservative management, and complete recovery.[6] Approximately 20 % to 25 % of patients develop clinically severe acute pancreatitis that may progress to clinical deterioration and death.[7] It is thought that the premature activation of digestive enzymes, mainly trypsin, found in the organ's acinar cells following an initial insult to the pancreas lead to an inflammatory cascade. This inappropriately activated, trypsin causes pancreatic inflammation and auto-digestion, which leads to release of amylase and lipase into the serum. In severe cases, this trypsin can mediate the release of many other proinflammatory cytokines, like Tumour Necrosis Factor (TNFα) and proteolytic enzymes into the circulation, that will lead to pancreatic necrosis, Systemic Inflammatory Response Syndrome (SIRS), septic shock and multi-organ failure.[8] Thus, assessment of specificity of amylase and lipase in our locality has significant role in the management of acute pancreatitis. Though gall stone and ethanol remains the two most common causes, it is important to know because ERCP can prevent further complications in the former.

Epidemiology

Incidence of acute pancreatitis ranges from 5 to 80 per 100,000 population in world-wide. Highest incidence recorded in Finland and the United States.[9] Depending up on prevalence of aetiological factors and ethnicity incidence will vary. The annual incidence of acute pancreatitis in Native Americans is 4 per 100,000 population; in whites, it is 5.7; and in blacks it is 20.7 15. Smoking is an independent risk factor for acute pancreatitis.[10]

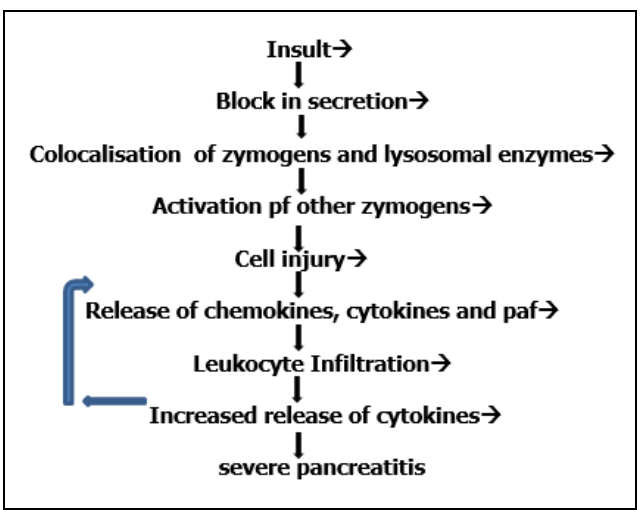
Causes of Acute Pancreatitis

Other than ethanol and gall stones, they are hypertriglyceridaemia, hyperparathyroidism, antibiotics, ART (Anti-Retroviral Therapy), steroids, anti-neoplastic, immunosuppressive, autoimmune, toxins, congenital anomaly, trauma, atherosclerotic, viral infections.

Patho Physiology

Acute pancreatitis is an inflammatory disease. Resulting from premature activation of enzyme within the pancreas, once activated, cause acinar cell injury. This in turn leads to inflammatory cell recruitment and activation as well as the generation and release of cytokines and other chemical mediators of inflammation. The exocrine pancreas secrete enzymes in inactive form and their activation occurs safely in the duodenum, where the brush-border enzyme entero-peptidase activates the trypsinogen, and the resulting trypsin then activates the other zymogens in a cascade reaction and help in digestion. Acute pancreatitis occurs when this enzyme get activated within the pancreas & resulting in gland injury. For believing this there are 3 reasons

- the pancreas is digestible by the activated enzymes of the duodenum;
- activated digestive enzymes are found within the pancreas during pancreatitis
- the histology of pancreatitis is suggestive of a coagulative necrosis.[11,12,13]



Pathogenesis of Pancreatitis

Clinical Presentation

Acute pancreatitis can range from a mild, self-limiting disease to severe one with multi-organ failure and mortality. It is one of the most common causes of hospital admission for GI (Gastro-Intestinal) illness.[5] Early diagnosis and severity assessment are essential to guide appropriate therapy. Clinical signs and symptoms include upper abdominal pain, back pain, vomiting, fever and tachycardia. They are non-specific. However, epigastric pain often radiating to the back is included in one among the three criteria for diagnosing acute pancreatitis in revised criteria of Atlanta classification of acute pancreatitis.[1] The classical, but rare, signs like umbilical, flank and inguinal bruising are found. They may be seen with any cause of retroperitoneal bleeding also. Assessment of disease severity is important to initiate goal directed therapy. However, there is lack of reproducible measures for assessing the severity.[14] There is often slight difference in initial signs and symptoms of severe disease from milder forms, but, with common causes.[15]

Laboratory Diagnosis

With characteristic abdominal pain or characteristic imaging, serum enzymes 3 times the upper limit of normal is diagnostic for acute pacreatitis.[4] Amylase and lipase peaks in 24 an 48 - 72 hours respectively and lipase has a longer half-life. Thus, serum lipase has a slightly higher sensitivity for detection.[16] Furthermore, elevated amylase can be seen

with other causes of abdominal pain such as tumours of the ovaries or even kidney failure.[17] Serum enzymes level are useful for diagnosis only, not for prognosis or assessment of disease severity. Assessment of severity scoring systems such as the Ranson or Glasgow scores are used to assess severity.[18,19] However, Ranson's criteria is a good predictor of initial severity, but, without reproducibility. Current data suggests they are poor predictors of disease severity[20] The Acute Physiology and Chronic Health Evaluation II (APACHE II) system is also used based on multiple variables.[13] Higher APACHE II scores at admission are associated with higher mortality, and data can be calculated within the first 24 hours. But it has a limited positive predictive value (43 %). Updates like clinical assessment of obesity (APACHE-O) or additional clinical variables[16] (APACHE III) are also nonspecific with high false-positive rates, are somewhat unwieldy to use, and are not commonly incorporated into practice. Brown et al[21] proposed haemoconcentration predicts parenchymal necrosis and organ failure. Despite fluid resuscitation, persistence of haemoconcentration and azotaemia are predictive of severe pancreatitis.[22] CRP > 150 at 48 hours after admission may help identify severe disease with superior sensitivity and specificity relative to other markers.[23] Newer methods include estimating urinary TAP (Targeted Assessment for Prevention).

The diagnosis of acute pancreatitis requires two of the following three features

- Severe epigastric pain often radiating to the back.
- Serum lipase or amylase three times greater than the upper limit of normal.
- radiological [CECT (Contrast-Enhanced Computed Tomography) / MRI (Magnetic Resonance Imaging) / USG (Ultra-Sono-Graphy)] evidence.[1,24]

METHODS

This is a diagnostic test evaluation conducted in the in-patient wards of Department of General surgery, Government Medical College, Thiruvananthapuram, over a period of 1 year 1 month i.e. from January 2018 to March 2019. Study population were patients admitted with a clinical diagnosis of acute pancreatitis (as determined by treating resident or surgeon) in the age group of 20 - 40 years, who gives consent for being involved in the study. Inclusion Criteria: First episode of acute pancreatitis, in the age group of 20 – 40 years. Exclusion Criteria: Acute pancreatitis with multiple risk factor.

Sampling Method and Sample Size

Consecutive sampling was done. Sample were calculated with use of data from studies quoting that sensitivity and specificity of lipase amylase ratio is 93 % and 85 % respectively.

$$n = \frac{[\,Z\frac{\alpha}{2}\sqrt{2 \text{ x } \bar{P}\,(1-P)} + \sqrt{P_1(1-P^1) + P_2(1-P^2)}]}{(P_1-P_2)^2}$$

Where P1 and P2 are sensitivity and specificity of the 2 tests, and sample size was calculated using Epi Info software n = 23

Here we are taking N = n x 4 = 92.

Data Collection

After randomly selecting patients admitted with a provisional diagnosis of acute pancreatitis, the first investigator will administer the consent form, following acceptance of which, after recording the biodata of the patient, the first investigator will examine the patient, evaluate the laboratory parameters. Then these patients will be prospectively followed and evaluated.

Data Analysis

After assimilation of the data, it will be entered into an Excel Spreadsheet version 2019 and then analysed using the SPSS software. Qualitative variables will be expressed in terms of frequency and proportion. Quantitative variables will be expressed as mean and standard deviation. Association between two qualitative variables will be assessed using chi square test and one qualitative and one quantitative variable will be looked using t test p value less than .05 is considered significant sensitivity and specificity will be assessed in SPSS software using cross tabulation.

Ethical Considerations

- Institutional Ethical Committee clearance was obtained.
- Informed consent obtained from the participants.
- Confidentiality was ensured and maintained throughout the study.
- No additional financial burden over the patient was ensured.

RESULTS

92 subjects were studied, 4 (4.3 %) patients were below 25 years age, 19 (20.7 %) patients were between 26 – 30 years, 35 (38 %) patients were between 31 - 35 years, while 34 (37 %) patients were above 35 years. Among the study population, 83 (90.2 %) patients were male and 9 (9.8 %) patients were female. Out of the 92 patients 80 (87 %) with acute pancreatitis and 12 (13 %) without acute pancreatitis. 55 (59.8 %) alcoholic and 25 (27.2 %) non-alcoholic. Of the 80 patients 15 (16.3 %), 56 (60.9 %) and 9 (9.8 %) patients were found to have mild, moderate and severe pancreatitis respectively.

74 (80.4 %) were having lipase value > 180 (> 3 times the normal), 18 (19.6 %) < 180 (low), 57 (62.0 %) having amylase value of > 330 (> 3 times normal) and 35 (38.0 %) < 330 (low). On calculating the lipase-amylase levels, 44 (47.8 %) were having a ratio of > 2 and 48 (52.2 %) ratio of ≤ 2.

Amylase Versus Pancreatitis

It was found that 57 patients had amylase > 330 among them 56 were found to have pancreatitis. Of 80 pancreatitis patient 56 patient got amylase > 330 and 24 patient got value < 330. Finally, it was found that amylase has sensitivity of 70 % and specificity of 91.67 % to differentiate pancreatitis from non-pancreatitis group. In pancreatitis group a value of > 330 was seen in 56 patients (70 %) whereas with value of ≤ 330 seen in 24 (30 %) and in non-pancreatitis group > 330 was seen in 1 patient (8.3 %) whereas ≤ 330 was seen in 11 patients (91.7 %) with

χ2 - 16.835
df - 1
P - < 0.001, respectively for each of the groups.

Lipase Versus Pancreatitis

It was found that 74 patients had lipase > 180 (3 times the upper limit of normal value) among them 73 were found to have pancreatitis. Out of 80 pancreatitis patient, 73 patient got lipase > 180 and 7 patient got value ≤ 180. Finally, it was found that lipase has sensitivity of 91.25 % and specificity of 91.67 % to differentiate pancreatitis from non-pancreatitis group.

In the pancreatitis group with value > 180 were seen in 73 patients (91.3 %) and value of ≤180 was seen in 7 patients (8.8 %) and the non-pancreatitis group with value > 180 was seen in 1 patient (8.3 %) and value of ≤180 was seen in 11 patients (91.7 %) with χ2 - 45.587, df – 1 and a p value of < 0.001, respectively for each of the groups.

Comparing Lipase and Amylase Value Separately in Alcoholic and Non-Alcoholic Pancreatitis Patients

Lipase Versus Alcoholic Pancreatitis - It was found that 53 patients had lipase > 180 (3 times the upper limit of normal value) among them 52 were found to have alcoholic pancreatitis. Out of 55 alcoholic pancreatitis patients, 52 patients got lipase > 180 and 3 patients got value < 180. Finally, it was found that lipase has sensitivity of 94.55 % and specificity of 91.67 % to differentiate alcoholic pancreatitis from non-pancreatitis group with a p value of < 0.001 {significant}, χ2 - 44.295 and df – 1.

Lipase vs Non-Alcoholic Pancreatitis - It was found that 22 patients had lipase > 180 (3 times the upper limit of normal value) among them 21 were found to have non-alcoholic pancreatitis. Out of 25 non-alcoholic pancreatitis patient 21 patients got lipase > 180 and 4 patients got value < 180. Finally it was found that lipase has sensitivity of 84 % and specificity of 91.67 % to differentiate non-alcoholic pancreatitis from non-pancreatitis group with a p value - < 0.001 {significant}, χ2 - 19.258 and df – 1.

Amylase vs Alcoholic Pancreatitis - It was found that 39 patients had amylase > 330 (3 times the upper limit of normal value) among them 38 were found to have alcoholic pancreatitis. Of 55 alcoholic pancreatitis patient 38 patients got amylase > 330 and 17 patients got value < 330. Finally, it was found that amylase has sensitivity of 69 % and specificity of 91.67 % to differentiate alcoholic pancreatitis from non-pancreatitis group with a p value of < 0.001 {significant), χ2 - 14.948 and df – 1.

Amylase Versus Non-Alcoholic Pancreatitis - It was found that 19 patients had amylase > 330 (3 times the upper limit of normal value) among them 18 were found to have non-alcoholic pancreatitis. Of 25 non-pancreatitis patients 18 patients got amylase > 330 and 7 patients got value < 330. Finally, it was found that amylase has sensitivity of 72 % and specificity of 91.67 % to differentiate pancreatitis from non-pancreatitis group with a p value of < 0.001 {significant), χ2 - 13.156 and df – 1.

Statistical Analysis of Lipase in All the Groups

In the alcoholic pancreatitis, non-alcoholic pancreatitis and non-pancreatitis groups:
Minimum lipase values were 26, 112 and 62;
Maximum lipase values were 5570, 5000 and 182;
Mean were 1713, 1208.4 and 134.7;
Median was 1324, 872 and 142;
Q1 were 788, 207.5 and 100.5;
Q3 were 2680, 1444.5 and 164 respectively.

ROC Explained

Sensitivity → 91.25
Specificity → 100.00

Criterion	Sensitivity	95 % CI	Specificity	95% CI	+LR	-LR	+PV	-PV
≥26	100.00	95.5-100	0.00	0.0-26.5		1.00		87.0
> 26	98.75	93.2-100.0	0.00	0.0-26.5		0.99	86.8	0.0
> 96	98.75	93.2-100.0	25.00	5.5-57.2	1.32	0.050	89.8	75.0
> 112	97.50	91.3 - 99.7	25.00	5.5 - 57.2	1.30	0.10	89.7	60.0
> 114	97.50	91.3 - 99.7	33.33	9.9 - 65.1	1.46	0.075	90.7	66.7
> 126	95.00	87.7 - 98.6	50.00	21.1 - 78.9	1.90	0.10	92.7	60.0
> 138	93.75	86.0 - 97.9	50.00	21.1 - 78.9	1.87	0.13	92.6	54.5
> 160	93.75	86.0 - 97.9	66.67	34.9 - 90.1	2.81	0.094	94.9	61.5
> 164	92.50	84.4 - 97.2	83.33	51.6 - 97.9	5.55	0.090	97.4	62.5
> 172	91.25	82.8 - 96.4	91.67	61.5 - 99.8	10.95	0.095	98.6	61.1
> 182	91.25	82.8 - 96.4	100.00	73.5 - 100.0		0.088	100.0	63.2
> 5570	0.00	0.0 - 4.5	100.00	73.5 - 100.0		1.00		13.0

Table 1. Criterion Values and Coordinates of the ROC Curve

NB: ROC Curve will be shown in the End as Image

From ROC curve it is clear that among 92 patients 80 patients were having pancreatitis with a prevalence of 87 %. Area under the curve is 0953 with a standard error of 0.0210 with a significant p value. Lipase got a maximum sensitivity of 91.25 % and specificity of 100 % if we are taking lipase cut of as 182.

Statistical Analysis of Amylase

In the alcoholic pancreatitis, non-alcoholic pancreatitis and non-pancreatitis groups:
Minimum amylase values were 78, 120 and 72;

Maximum lipase values were 2137, 4249 and 432;
Mean were 706.4, 1208 and 210.8;
Median was 1324, 872 and 142;
Q1 were 259, 258.5 and 275;
Q3 were 1046, 1671.5 and 296.5 respectively.

ROC Explained

Sensitivity →70.00
Specificity → 91.67

Criterion	Sensitivity	95% CI	Specificity	95% CI	+LR	-LR	+PV	-PV
≥72	100.00	95.5 - 100.0	0.00	0.0 - 26.5		1.00		87.0
> 72	100.00	95.5 - 100.0	8.33	0.2 - 38.5	1.09	0.00	87.9	100.0
> 78	98.75	93.2 - 100.0	8.33	0.2 - 38.5	1.08	0.15	87.8	50.0
> 114	98.75	93.2 - 100.0	25.00	5.5 - 57.2	1.32	0.050	89.8	75.0
> 120	97.50	91.3 - 99.7	25.00	5.5 - 57.2	1.30	0.10	89.7	60.0
> 128	96.25	89.4 - 99.2	33.33	9.9 - 65.1	1.44	0.11	90.6	57.1
> 132	96.25	89.4 - 99.2	50.00	21.1 - 78.9	1.92	0.075	92.8	66.7
> 135	95.00	87.7 - 98.6	50.00	21.1 - 78.9	1.90	0.10	92.7	60.0
> 150	95.00	87.7 - 98.6	58.33	27.7 - 84.8	2.28	0.086	93.8	63.6
> 242	78.75	68.2 - 87.1	58.33	27.7 - 84.8	1.89	0.36	92.6	29.2
> 244	78.75	68.2 - 87.1	66.67	34.9 - 90.1	2.36	0.32	94.0	32.0
> 283	73.75	62.7 - 83.0	66.67	34.9 - 90.1	2.21	0.39	93.7	27.6
> 286	73.75	62.7 - 83.0	75.00	42.8 - 94.5	2.95	0.35	95.2	30.0
> 300	72.50	61.4 - 81.9	83.33	51.6 - 97.9	4.35	0.33	96.7	31.3
> 313	70.00	58.7 - 79.7	83.33	51.6 - 97.9	4.20	0.36	96.6	29.4
> 322	70.00	58.7 - 79.7	91.67	61.5 - 99.8	8.40	0.33	98.2	31.4
> 429	61.25	49.7 - 71.9	91.67	61.5 - 99.8	7.35	0.42	98.0	26.2
> 432	60.00	48.4 - 70.8	100.00	73.5 - 100.0		0.40	100.0	27.31
> 4249	0.00	0.0 - 4.5	100.00	73.5 - 100.0		1.00		13.0

Table 2. Criterion Values and Coordinates of the ROC Curve

NB: ROC Curve will be shown in the End as Image

From ROC curve it clear that, among 92 patients 80 patient were having pancreatitis with a prevalence of 87 %. Area under the curve is 0.865 with a standard error of 0.0472 with a significant p value. Amylase will get a maximum sensitivity of 70 % and specificity of 91.67 % if we are taking amylase cut of as 322.

Statistical Analysis of L-A Distribution

Out of 92 patients, 44 (47.8 %) patients got lipase-amylase ratio > 2 and 48 (52.2 %) patients got ≤ 2.
In the alcoholic pancreatitis, non-alcoholic pancreatitis and non-pancreatitis groups:
Minimum lipase-amylase ratios were 0.01, 0.2 and 0.2;
Maximum lipase-amylase ratios were 9.8, 3.7 and 1.2;
Mean were 2.7, 1.1 and 1;
Median was 2.4, 1.2 and 1.1;
Q1 were 2.0, 0.5 and 0.4;
Q3 were 3.0, 1.7 and 1.4 respectively.

L-A Ratio Versus Types of Pancreatitis

When comparing to alcoholic and non-alcoholic pancreatitis patient, 43 patients got lipase-amylase ratio > 2 among them 42 were alcoholic pancreatitis. Among 55 alcoholic pancreatitis patients 42 (76.36 %) got ratio > 2 and 13 (23.64 %) got < 2 with a sensitivity of 76.36 % and specificity of 96 %.

Ratio	Alcoholic Pancreatitis		Non-Alcoholic Pancreatitis		Total		χ2	Df	p
	N	%	n	%	N	%	36.205	1	
> 2.00	42	97.7	1	2.3	43	100.0	0.0001		
< 2.00	13	35.1	24	64.9	37	100.0			
Total	55	68.8	25	31.3	80	100.0			

Table 3. L-A Ratio Versus Types of Pancreatitis

ROC Explained

Optimum cut off → > 1.875
Sensitivity → 80 %
Specificity → 92 %

Positive if Greater Than or Equal to[a]	Sensitivity	1 – Specificity
1.685000	.818	.240
1.755000	.818	.200
1.815000	.800	.200
1.845000	.800	.160
1.865000	.800	.120
1.875000	.800	.080
1.905000	.782	.080
1.960000	.764	.080
2.010000	.764	.040
2.040000	.745	.040
2.075000	.727	.040
2.130000	.709	.040

Table 4. ROC Table for L-A Ratio to Find Out Optimum Cut Off Value to Distinguish between Alcoholic Versus Non-Alcoholic Pancreatitis

NB : ROC Curve will be shown in the End as Image

From ROC curve it's clear that among 80 pancreatitis patient (55 alcoholic and 25 non-alcoholic pancreatitis) area under the curve is 0.872 with a standard error of 0.044 and 95 % confidence interval of 0.786 - 0.958 and we will get a maximum sensitivity and specificity (80 % & 92 %) if the cut of value become > 1.875. for a cut of > 2 sensitivity will reduce to 76.4 % even though, specificity increases to 96 %.

DISCUSSION

On laboratory investigations, 74 (80.4 %) patients show lipase more than 180 (3 times the upper limit of normal value). It was found that lipase has sensitivity of 91.25 % and specificity of 91.67 % to differentiate pancreatitis from non-pancreatitis group. ROC curve show disease prevalence of 87 % and an optimum cut off value of 182, so that we get a sensitivity of 91.25 % and specificity of 100 %. It was found that 57 patients had amylase > 330 (3 times the upper limit of normal value) and shows amylase has sensitivity of 70 % and specificity of 91.67 % to differentiate pancreatitis from non-pancreatitis group. ROC curve shows disease prevalence of 87 % and an optimum cut off value of 322 so that we get a sensitivity of 70 % and a specificity of 91.67 %. In previous study lipase and amylase shows sensitivity and specificity 96.6 % and 99.4 %, 78.6 % and 99.1 %[26] respectively.

When comparing to serum enzyme level in alcoholic and non-alcoholic pancreatitis, it was found among 55 alcoholic pancreatitis patients:

1. 52 patients had lipase > 180 and one non pancreatitis patient got a value > 180. Thus, lipase shows sensitivity of 94.55 % and specificity of 91.67 % to differentiate

alcoholic pancreatitis from non-pancreatitis group with a significant p value (0.001)

2. 38 patients got amylase > 330 and one non pancreatitis patient got a value > 330. Thus, amylase shows sensitivity of 69 % and specificity of 91.67 % to differentiate alcoholic pancreatitis from non-pancreatitis group with a significant p value (0.001).

Among 25 non-alcoholic pancreatitis patients:

1. 21 patients had lipase > 180 and one non pancreatitis patient got a value >180. Thus, lipase shows sensitivity of 84 % and specificity of 91.67 % to differentiate non-alcoholic pancreatitis from non-pancreatitis group with a significant p value (0.001).
2. 18 patients had amylase > 330 and one non pancreatitis patient got a value > 330. Thus, amylase shows sensitivity of 72 % and specificity of 91.67 % to differentiate pancreatitis from non-pancreatitis group with a significant p value (0.001).

When comparing to lipase- amylase ratio in alcoholic and non-alcoholic pancreatitis group:

43 patients got lipase-amylase ratio more than 2, among them 42 were having alcoholic pancreatitis. Only one non-alcoholic patient got a value more than 2. Thus lipase-amylase ratio in alcoholic and non-alcoholic pancreatitis group shows sensitivity of 76.36 % and specificity of 96 %, ROC curve shows an optimum cut off value of > 1.875 for that we will get a sensitivity of 80 % and specificity of 92 %.

CONCLUSIONS

Serum amylase and lipase are necessary investigations in the diagnosis of acute pancreatitis. We got a good specificity and sensitivity for lipase and amylase in both types of patients. L / A ratio is a good tool to distinguish between alcoholic and non-alcoholic pancreatitis and have much sensitivity and specificity. Lipase-amylase ratio of more than 2 can be considered as alcoholic pancreatitis. Lipase-amylase ratio of less than 2 can be considered as non-alcoholic pancreatitis. Disease prevalence for the age group of 20 – 40 years is 87.

Data sharing statement provided by the authors is available with the full text of this article at jebmh.com.
Financial or other competing interests: None.
Disclosure forms provided by the authors are available with the full text of this article at jebmh.com.

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