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An Ayurvedic approach towards management of Acute Pancreatitis: A Case Study

Gracy Sokiya¹, Paridhi Painuly², Mudita Negi³, Gaurav Sharma⁴

¹Assistant Professor, Department of Kayachikitsa, Patanjali Ayurveda College, Haridwar, Uttarakhand, India.

^{2,3}Post Graduate Scholar, Department of Kayachikitsa, Patanjali Ayurveda College, Haridwar, Uttarakhand, India.

⁴Assistant Professor, Department of Rachana Sharir, Patanjali Ayurveda College, Haridwar, Uttarakhand, India.

ABSTRACT

In acute pancreatitis, there is sudden inflammation of the pancreas, histologically characterized by the destruction of acinar cells, which can range from mild to life-threatening. A 22-year-old non-alcoholic male patient presented to the outpatient department (OPD) with acute abdominal pain, accompanied by heartburn and nausea. MRCP findings suggested acute pancreatitis, with a large heterogeneous collection observed along the body and tail of the pancreas in the lesser sac, containing internal debris and hemorrhagic contents indicative of a pancreatic pseudocyst, along with elevated serum amylase and lipase concentrations. Due to the similarity between the patient's chief complaints and the symptoms of *Pittaja Gulma*, treatment was administered based on the principles of *Pittaja Gulma*. The treatment regimen included *Dashmool Kwath*, *Mulethi Kwath* with *Narikela Lavana*, *Drakshovin* syrup, and a combination of *Avipattikar Churna*, *Kamdudha Ras*, *Praval Panchamrit Ras*, and *Shankha Bhasma*. After 15 days of treatment, serum markers returned to normal levels, and ultrasonography reports indicated satisfactory changes. The therapy's effectiveness was deemed satisfactory, with statistically significant improvements observed in both clinical and laboratory findings.

Key words: Acute pancreatitis, *Pittaja Gulma*, *Pseudocyst*

INTRODUCTION

Acute pancreatitis is a common inflammatory disease of the exocrine pancreas that causes severe abdominal pain and multiple organ dysfunctions that may lead to pancreatic necrosis and persistent organ failure, with a mortality of 1-5%. It leads to significant short and long term morbidity, which causes prolonged frailty, disease reoccurrence, pancreatic endocrine and exocrine insufficiency. The prognosis mainly depends

on the development of organ failure and secondary infection of pancreatic and peripancreatic necrosis. Despite improvements in treatment and critical care severe acute pancreatitis is still associated with high mortality rates.^[1]

Pancreatitis is a serious clinical condition that manifests in either its acute or chronic forms. The underlying pancreatic disease especially if asymptomatic, the diagnosis can be missed. The etiologies of pancreatic ascites and pancreatic pleural effusions are identical and rarely seen together in the same patient. The patients with acute pancreatitis have abdominal pain, persistent vomiting, and fever. The diagnosis is made on the basis of laboratory findings including serum markers such as S. Amylase, S. Lipase and CT abdomen.^[2-3]

There is no exact correlation to acute pancreatitis in Ayurveda. It may be correlated with *Pittaja Gulma*. On the basis of etiology and presenting complaints the *Dosha* predominance can be understood. As the patient had been taking spicy food and had a sedentary

Address for correspondence:

Dr. Paridhi Painuly

Post Graduate Scholar, Department of Kayachikitsa, Patanjali Ayurveda College, Haridwar, Uttarakhand, India.

E-mail: paridhip08@gmail.com

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lifestyle for a long duration it was very clear that there is vitiation of *Rakta*^[4-5] as per *Acharya Charaka* verse (*Ca. Su. 24:5*) and vitiation of *Medovaha Srotas* (*Ca. Vi. 5:16*). *Rakta* is the causative factor for the suppuration as indicated by *Acharya Charaka* in *Gulma* treatment (*Ca. Chi. 5:37*). Now due to *Ashraya Ashrayeebhava* of *Rakta* and *Pitta*, the vitiated *Rakta* causes vitiation of *Pitta* which quickly causes suppuration. Considering the aetio-pathogenesis and diagnosis the treatment was planned focusing *Pitta-Shamana* (pacifying *Pitta*), *Rakta-Prashadaka* (blood purifier) and *Medovaha Sroto-Sodhaka*. Based on this treatment principle medicine like *Mulethi Kwath*, *Narikela Lavana*, *Avipattikar Churna*, *Kamdudha Ras*, *Shankh Bhasma*, *Praval Panchamrit Ras* and *Drakshovin* syrup was given for 15 days and restriction of diet was advised.^[6]

The causative factors of *Paitikka Gulma* are the intake of pungent, sour, penetrating, hot, *Vidahi* (which cause acidity or burning sensation in the stomach) and unctuous articles of diet, excessive intake of alcohol and exposure to sun as well as fire, vitiation of blood.

CASE PRESENTATION

A 22 year old male patient from Dehradun was apparently well and was asymptomatic back in July 2022 when suddenly he had his first episode of severe abdominal pain with nausea and heartburn for which he went to a nearby hospital and was given symptomatic relief and was advised ultrasound for further evaluation. He was admitted under a Gastroenterologist in Dehradun for a week and was treated with intravenous fluids, analgesics, antacids and antibiotics. His symptoms were quiet relieved but mild pain in lower abdomen was persistent.

After a month i.e., in the month of August the patient experienced another episode of severe abdominal pain associated with burning sensation and was admitted to the same hospital for a week. He was again treated with intravenous fluids, analgesics, antacids and antibiotics. He was symptomatically relieved and allopathic medication was continued.

Later the patient experienced one more episode of pancreatitis in the month of September.

In the month of October he approached the OPD of Kayachikitsa, Patanjali Ayurveda Hospital, Haridwar, Uttarakhand. The patient complained of heartburn with a burning sensation in the abdomen in the epigastric region that aggravates with food intake, particularly spicy as well as oily food.

Since the 1st episode of pain, the boy had been taking a diet devoid of dairy, protein, and fat and had been taking pancreatic enzymes and antioxidants daily.

He was very much disturbed emotionally and was anxious as well as mildly depressed, on clinical evaluation. On examination of vitals - pulse rate was found to be 72/min., heart rate was 75/min, blood pressure was 110/70 mm Hg (right arm sitting), temperature was 98.4°F (armpit), respiration rate was recorded as 17 min and body weight was 57Kg, having height of 170cm on measurement. He was emaciated; abdomen was of normal contour with no dilated veins, no visible peristalsis, no striae. On palpation, tenderness was present in the epigastric, left hypochondrim. His laboratory tests revealed hemoglobin level of 10.2 g/dL, serum amylase - 778 IU/L, serum lipase - 504 IU/L. MRCP Upper abdomen revealed acute pancreatitis with a large heterogeneous collection along the body and tail of pancreas in lesser sac with internal debris and hemorrhagic contents s/o pancreatic pseudocyst with high serum amylase concentration.

After 15 days, the patient attended OPD for first follow up with relief in abdominal pain, relief in heart burn and was taking a semi liquid diet. On abdominal examination there was no tenderness in the epigastric region. Patient was suggested to continue the same treatment for next 15 days with a semi-liquid diet. After 15 days, the patient attended OPD for second follow up. Patient was suggested to repeat serum amylase and lipase tests and abdominal sonography to evaluate the improvement. The investigations were done and recorded as normal. MRCP of the abdomen revealed reduction in size of Pseudo pancreatic cyst and minimal perisplenic fluid with minimal B/L pleural effusion.

As maintenance therapy, he was advised to continue

Dashmool kwath 1 tablespoon full boiled in 400ml of water, reduced to 100 ml twice a day for 15 days. No further episodes were reported for the next three months.

SN	Intervention	Anupana
1.	<i>Dashmool Kwath</i> (1tsf) + <i>Mulethi Kwath</i> (½ tsf) - boil in 400ml water reduce it to 100 ml	100 ml twice a day empty stomach
2.	<i>Narikela Lavana</i> - 1 tsf twice a day after meal	Lukewarm water
3.	Syp. <i>Drakshowin</i> - 4 tsf with equal amount of water twice a day after meal	Lukewarm water
4.	<i>Avipattikar Churna</i> - 100g, <i>Kamdudha Ras</i> - 20g, <i>Pravaal Panchamrit Ras</i> - 10g, <i>Shankh Bhasma</i> - 10g Mix all of the above and make 60 doses, take 1 dose thrice a day before meal	Lukewarm water

RESULT

Since the intervention of ayurvedic therapy, the patient reported gradual improvement in all symptoms. His pain in abdomen with heartburn was completely gone after 15 days of treatment. His appetite although improved gradually after one month treatment. He reported no symptoms or discomfort after the treatment. This led to a significant improvement in his general well-being, enabling him to lead a normal life.

In October 2023, the administration of ayurvedic therapy was ceased. He was asymptomatic and clinically fine. Follow-up MRCP indicated the arrestation of the disease process. The comparative MRCP report done in October 2022 and June 2023 showed decrease in the size of pseudo pancreatic cyst and peri pancreatic fluid around the pancreas.

DISCUSSION

The present case is worth enough to be discussed as it helps to understand the efficacy as well as utility of

fundamentals of Ayurvedic treatment methodology in treating the complicated cases.

The case above discussed is a case of acute pancreatitis complicated with pleural effusion and mild ascites. Most of the time, in such cases the patient seeks contemporary medicines due to severe pain, vomiting and restlessness associated with the disease and if rarely anyone took Ayurvedic medicines it may be either as add-on therapy or just to compensate the long- term side-effects caused by the contemporary medicines (if any). And unfortunately, in such rare instances most of them remain undocumented, making it difficult to rationalize the treatment protocol. In the above case it is tried to use very simple herbal medicines based on treatment principle that are easily available so that the results can be reciprocated and moreover the rationality of treatment principle can also be adjudicated. It can be assumed that the medicines have profound anti-inflammatory properties. During the treatment, the patient neither developed any complications (e.g. Organ failure) nor showed any worsening of symptoms.

Dashmool Kwath - helps in the vitiation of *Vata Dosh*a by reducing its aggravation. It balances *Vata*, *Pitta* and *Kapha* known to be as a *Tridosha Shamak*. Inflammation or *Vata Vyadhi* is treated by this medicine very well. It has potent anti-inflammatory and antioxidant properties, as a result, it is utilized to treat painful, inflammatory musculoskeletal disorders.^[7]

Mulethi Kwath - *Mulethi* naturally has sweet taste i.e., *Madhur Rasa*, *Sheeta Virya* and *Madhur Vipaka*, it possesses anti-inflammatory properties. It is often used to soothe gastrointestinal problems like indigestion, acidity and ulcers due to its anti-inflammatory properties. It also has hepatoprotective properties. Sodium glycyrrhizate present in *Mulethi* shows anti-ulcer activity and stimulation of regeneration of skin.^[8] It aggravates *Vata*, scrapes *Kapha* and normalizes *Pitta* and *Rakta*. It promotes healing process.

Narikela Lavana - an Ayurvedic formulation mentioned in *Rastarangini*, is stated to be used for

diseases like *Amlapitta* (hyperacidity), abdominal pain due to G.I tract disorders i.e., *Vataj*, *Pittaj*, *Kaphaj* and *Sannipataj Shula* and *Parinamashula* (duodenal ulcer) and because of the presence of *Saurvarchala Lavan*, *Saindhav Lavan* it can be useful in *Anaha*, *Gulma*, *Udarshula*.^[9]

Drakshowin syrup - An Ayurvedic formulation which is curated with ingredients like *Brahmi*, *Draksha* and *Ashwagandha* which helps in boosting digestion and improving appetite. It is effective in *Agnimandya* and *Aruchi* by regularizing *Pitta* secretion and enhancing the action of *Agni*. It also strengthens the *Annavaha Srotas* by reestablishing metabolic activity.^[10]

Avipattikar Churna - it exhibits the antiulcer properties. *Haritaki*, *Maricha* and *Pippali* exert cytoprotective effects on the gastric mucosa. *Shunthi* decreases the gastric secretion, it increases the mucosal resistance and potentiates the defensive factors of the gastric mucosa. *Lavang* helps in maintaining the basal gastric mucosal blood flow and it increases the mucus secretion.^[11]

Kamdudha Ras - its action can be seen right from *Amashaya* like it reduces heat of the stomach, reduces inflammation of the organs of the digestive system and lowers the tendency of bleeding. The main *Karya* of *Kamdudha Ras* is *Pittashaman*, *Raktastambhan*, *Kshobhanashan* and is *Shitviryatmak*. Therefore it is used in various *Mahastrotasa Vyadhis* like *Raktapitta*, *Amlapitta*, *Raktaj* and *Pittaj Atisara*, *Pittaj Hrudrog*, *Sarvanga Shotha* etc.^[12]

Praval Panchamrit Ras - the drugs are of *Madhura*, *Tikta*, *Kashaya* and *Katu Ras*, *Madhur Vipaka* and *Sheetvirya* which are *Pittashamaka* hence symptoms like *Amla Tikta Udgara*, *Urakantha Daha* due to *Vidagda Pitta* get relieved.^[13]

Shankha Bhasma - In *Rasa Shastra* literatures so many formulations of *Shankha Bhasma* are described in the context of treatment of diseases like *Udara roga*, *Grahani*, *Gulma*, *Agnimandya*, *Amlapitta*, *Parinamashoola*, *Swasa*, *Vamana*, *Vishuchika*, *Arsha*, *Kushtha*, *Prameha*, *Netraroga* and other chronic disease. *Shankha Bhasma* had been documented to be prescribed in indigestion (*Ajirna*), decreased enzymatic

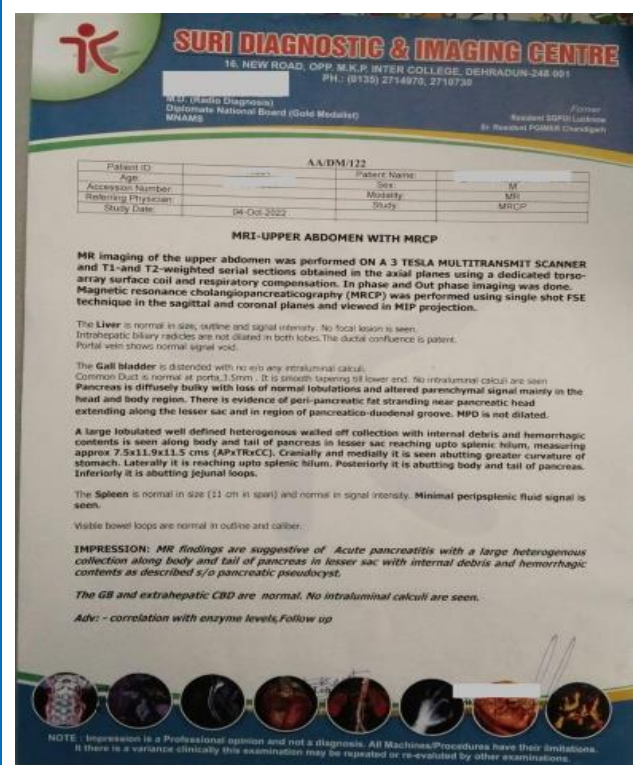
secretion (*Agnimandhya*), irritable bowel syndrome (*Grahani*), sour eructation/acidity (*Amlapitta*), duodenal ulcer (*Parinamashula*), hepatosplenomegaly (*Yakrittaplihavridhi*) and toxins (*Visha*).^[14]

Dashmool Kwath + *Drakshovin syrup* + *Mulethi Kwath* + *Narikela Lavan* work as an anti-inflammatory, helps in reducing abdominal pain and also improves appetite and boosts up the digestion, whereas *Avipattikar Churna* with the combination of *Kamdudha Ras*, *Praval Panchamrit Ras* and *Shankha Bhasma* helps in regulating hyperacidity and work as *Pitta Shamak*.

CONCLUSION

Acute pancreatitis associated with mild ascites and bilateral pleural effusion is a complicated presentation with significant mortality and morbidity. It requires a skillful management plan. Delay in assessing or mismanagement may have serious consequences. Management of such cases with the Ayurvedic medicines within time constraint and without any complications is encouraging and needs to be further evaluated on a large number of subjects to bring some concrete conclusion and better treatment modality.

MRCP Oct 2022



MRCP June 2023

ARTEMIS
Artemis Hospital Gurgaon

Patient Name: [Redacted] Register Date: 06-Jun-2023, 09:50 pm
 Patient ID: 024000040007 Enrolment ID: 14200728805
 Age: [Redacted] Doctor: [Redacted]
 Gender: Male Specialty: General Surgery
 National ID: [Redacted]

MRI Cholangiography (MRCP)

Preliminary Report:

Protocol:

MRI of upper abdomen and MRCP has been performed using phased array coil on wide bore Bio Matrix enabled state of the art MR Scanner. SET1 and balance TFE and single shot T2 sequences in the axial and coronal planes were obtained through the upper abdomen followed by thin and thick slab MRCP sequences.

Clinical details: Follow up case of Acute Pancreatitis with WOPN.

Observations:

There is evidence of circumscribed, lobulated lesion / collection in peripancreatic region and anterior pararenal space. It is showing iso to hyperintense signals on T2WI, heterogeneous signals on T2 fat sat sequence, measuring 8.0 x 3.2 x 5.2cm (TR x AP x CC) vs 8.0 x 3.6 x 4.2cm (TR x AP x CC). On T1WI, lesion is mildly hypointense and shows hyperintensity on DWI sequence. It is indistinctly visualised from the pancreatic tail.

Body and head of pancreas appears normal.

The main pancreatic duct is normal in course and calibre.

Gall bladder appears distended. Wall thickness is normal. The lumen is clear.

No IHBR dilation. The right and left hepatic ducts are normal.

CBD is normal throughout its course and calibre. There is no intra-luminal filling defect.

The liver is normal in size, shape and MR signals. No focal parenchymal lesion is seen.

Spleen is normal in size, shape and MR signals.

Both kidneys are normal in size, shape and MR signals. No focal parenchymal lesion is seen. Bilateral

pelvic/cyceal system is normal.

IMPRESSION: Findings show heterogeneously signal intensity lobulated lesion / collection in peripancreatic and anterior pararenal space consistent with WOPN.

As compared to previous scan dated 20-02-2023, there is mild decrease in size of WOPN.

Please correlate clinically.

MRCP Feb 2024

ARTEMIS MAGNETIC & IMAGING CENTRE
 WE, NEW ROAD, G.P.P. M.K.P. INTER COLLEGE, DEHRADUN-248 001
 Ph. : 05135 2714979, 2716736, 9839697234

AA-DM-122

Patient ID: 0520241615 Patient Name: [Redacted]
 Age: 23 Years Sex: M
 Study Date: 14-Feb-2024 Modality: MR
 Study: MRCP

MRI-UPPER ABDOMEN WITH MRCP

Clinical Information / History : FUC of Pancreatitis with Pseudocyst formation.

MR imaging of the upper abdomen was performed ON A 3 TESLA MULTITRANSHEAT SCANNER and T1- and T2-weighted serial sections obtained in the axial planes using a dedicated torso-array surface coil and respiratory compensation. In phase and Out phase imaging was done. Magnetic resonance cholangiopancreatography (MRCP) was performed using single shot FSE technique in the sagittal and coronal planes and viewed in MIP projection.

The **Liver** is normal in size (13.1cm), outline and signal intensity. No focal lesion is seen. Intrahepatic biliary radicles are not dilated in both lobes. The ductal confluence is patent. Portal vein shows normal signal void.

The **Gall bladder** is distended with no echo to any intraluminal calculi. Common Duct is normal at porta, 3.5mm. It is smoothly tapering till lower end. No intraluminal calculi are seen.

Pancreas shows normal signals. Mild atrophy of distal body and tail region. No evidence of peripancreatic fat stranding is noted. MPD is not dilated (2 mm in diameter). A large lobulated well defined heterogeneous walled off collection with internal debris and heterogeneous contents is seen along tail of pancreas in lesser sac reaching upto splenic hilum, measuring approx 3.3 x 5.7 x 6.2 cms (APxTRxCC). Inferiorly it is abutting jejunal loops.

The **Spleen** is normal in size (10.6 cm in span) and normal in signal intensity. Visible looped loops are normal in outline and calibre.

IMPRESSION: In a FUC of Acute pancreatitis, MR findings are suggestive of heterogeneous collection along tail of pancreas in lesser sac with internal debris and heterogeneous contents as described s/o pancreatic pseudocyst. The GB and extrahepatic CBD are normal. No intraluminal calculi are seen.

In comparison to previous scan dated 30/06/2023 done elsewhere (Images not available for comparison), there is mild reduction in size of Pseudopancreatic cyst.

Adv: - clinical correlation and Follow up

NOTE: Impression is a Professional opinion and not a diagnosis. All Machines/Procedures have their limitations. It there is a variance clinically this examination may be repeated or re-evaluated by other examinations.

S.Lipase and Amylase July 2022

img Labs

Client Name: [Redacted] Register Date: 06-Jun-2023, 09:50 pm
 Patient ID: 024000040007 Enrolment ID: 14200728805
 Age: [Redacted] Doctor: [Redacted]
 Gender: Male Specialty: General Surgery
 National ID: [Redacted]

BIOCHEMISTRY

Test Name	Result	Unit	Bio. Ref. Range	Method
Lipase	2,330.0	U/L	12-53	Colorimetric rate

Comment:
 Pancreas is the major and primary source of serum lipase. Though lipase is also secreted by the gastric and intestinal mucosa. Lipase measurement is used to diagnose acute pancreatitis. After an attack of acute pancreatitis, serum Lipase activity increases within 4 to 8 hours, peaks at about 24 hours, and decreases over 8 to 14 days. Concentrations often remain elevated longer than those of Amylase. The increase in serum Lipase activity is not necessarily proportional to the severity of the attack.

Increased levels are seen in:
 • Acute & Chronic Pancreatitis.
 • Obstruction of Pancreatic duct.
 • Non-pancreatic conditions like renal disease, intestinal obstruction, acute cholecystitis, duodenal ulcer, alcoholism, diabetic ketoacidosis and following endoscopic retrograde cholangiopancreatography (ERCP).

img Labs

Client Name: [Redacted] Register Date: 06-Jun-2023, 09:50 pm
 Patient ID: 024000040007 Enrolment ID: 14200728805
 Age: [Redacted] Doctor: [Redacted]
 Gender: Male Specialty: General Surgery
 National ID: [Redacted]

BIOCHEMISTRY

Test Name	Result	Unit	Bio. Ref. Range	Method
Amylase	2,990	U/L	30.0 - 110.0	Ethylolone Blockad (NPG7)

Comment:
 Amylase is produced by Pancreas and some salivary glands. Amylase levels are significantly increased in patients with acute pancreatitis, pancreatic duct obstruction, carcinoma pancreas, trauma, or lung, cholecystitis, macroamylasemia, renal disease, pancreatic pseudocyst, procedures like Endoscopic retrograde cholangiopancreatography (ERCP) and acute alcohol poisoning. Low Amylase levels are seen in Chronic Pancreatitis, Congestive Heart failure, 2nd & 3rd trimester of pregnancy, Gastrointestinal cancer & bone fractures. Drugs causing increased amylase levels are aspirin, diuretics, oral contraceptives, corticosteroids, indomethacin, ethyl alcohol and opiate intake. In acute pancreatitis, elevated amylase levels usually parallel lipase concentrations, although lipase levels may take a bit longer to rise, will remain elevated longer and are more specific than amylase as a marker for pancreatitis.

S.Lipase And Amylase Aug 2022

img Labs

Client Name: [Redacted] Register Date: 06-Jun-2023, 09:50 pm
 Patient ID: 024000040007 Enrolment ID: 14200728805
 Age: [Redacted] Doctor: [Redacted]
 Gender: Male Specialty: General Surgery
 National ID: [Redacted]

BIOCHEMISTRY

Test Name	Result	Unit	Bio. Ref. Range	Method
Lipase	1,150.0	U/L	12-53	Colorimetric rate

Comment:
 Pancreas is the major and primary source of serum lipase. Though lipase is also secreted by the gastric and intestinal mucosa. Lipase measurement is used to diagnose acute pancreatitis. After an attack of acute pancreatitis, serum Lipase activity increases within 4 to 8 hours, peaks at about 24 hours, and decreases over 8 to 14 days. Concentrations often remain elevated longer than those of Amylase. The increase in serum Lipase activity is not necessarily proportional to the severity of the attack.

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 Age: [Redacted] Doctor: [Redacted]
 Gender: Male Specialty: General Surgery
 National ID: [Redacted]

BIOCHEMISTRY

Test Name	Result	Unit	Bio. Ref. Range	Method
Amylase	1,805	U/L	30.0 - 110.0	Ethylolone Blockad (NPG7)

Comment:
 Amylase is produced by Pancreas and some salivary glands. Amylase levels are significantly increased in patients with acute pancreatitis, pancreatic duct obstruction, carcinoma pancreas, trauma, or lung, cholecystitis, macroamylasemia, renal disease, pancreatic pseudocyst, procedures like Endoscopic retrograde cholangiopancreatography (ERCP) and acute alcohol poisoning. Low Amylase levels are seen in Chronic Pancreatitis, Congestive Heart failure, 2nd & 3rd trimester of pregnancy, Gastrointestinal cancer & bone fractures. Drugs causing increased amylase levels are aspirin, diuretics, oral contraceptives, corticosteroids, indomethacin, ethyl alcohol and opiate intake. In acute pancreatitis, elevated amylase levels usually parallel lipase concentrations, although lipase levels may take a bit longer to rise, will remain elevated longer and are more specific than amylase as a marker for pancreatitis.

S.Lipase October 2022

Investigation	Result	Units	Bio. Reference Interval
Hemoglobin, W. Blood †	10.2	g/dL	13.0 - 17.0
WBC Count, W. Blood †	7200	/cu.mm	4000 - 11000
Platelet Count, W. Blood †	368	x 10 ³ /mm ³	100 - 400
Hematocrit (Hct/PCV), W. Blood	30.3	%	37.0 - 51.0
R B C Count, W. Blood †	3.51	10 ¹² /L	4.20 - 6.30
MCV †	86.3	fL	76.0 - 96.0
MCHC †	29.1	g/dL	26.0 - 32.0
RDW	17.0	%	0.0 - 15.0
Lipase, Serum	504	U/L	23 - 300

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