RESEARCH ARTICLE ISSN 2456-0170

AN INTEGRATED APPROACH ON MANAGEMENT OF IDIOPATHIC RECURRENT ACUTE PANCREATITIS (IRAP) WITH PERSISTANTLY INCREASED SERUM AMYLASE IN SPHINCTER OF ODDI DYSFUNCTION – A CASE REPORT

[1]Dr Soumya M S [2]Dr Swathy Surendran [3]Dr Sharath S G [4]Dr Rajeshwari P N

[1] Ayurveda Physician, St Vincent AyurvedaTreatment centre Medical College, Trivendrum [2]Ayurveda Physician, Raha Ayurveda Hospital, Edapally, Kochi [3]Associate professor, Dept. of Rachana sharir (Anatomy),Amrita School of Ayurveda, Amritapuri, Amrita Vishwa Vidyapeetham. [4]Associate professor, Dept. of Shalya Tantra (Surgery), Amrita School of Ayurveda, Amritapuri, Amrita Vishwa Vidyapeetham. India

ABSTRACT

Idiopathic Recurrent Acute Pancreatitis (IRAP) is a clinical entity portraying episodes of acute pancreatitis which occurs more than one occasion after the initial attack. The prevalence of Idiopathic The present case report highlights the efficacy of *Ayurvedic* treatment in, reducing the signs and symptoms of IRAP with significant changes in raised serum amylase and lipase. A 13year old girl, known case of Idiopathic Recurrent Acute pancreatitis after acute pancreatitis management came to OPD of Amrita School of Ayurveda with complaints of abdominal pain and nausea. On further evaluation Serum Amylase and Lipase were raised with USG showing bulky and hypoechoic uncinated process and head of pancreas. She was managed with internal medications like *Yaṣṭimadhu kṣīrapāka* (Licorice milk) and *Avipatti churna* for four months, by considering the treatment principles for *AmlaPitta* (Acid Reflux). In this case the combination of *Yaṣṭimadhu kṣīrapāka* and *Avipatti churna*, has shown a remarkable recovery from clinical symptoms and reduction in serum amylase and lipase. Over-all present study proves effective and safe management of Post IRA Psymptoms through *Ayurveda.*

KEYWORDS: Idiopathic Recurrent Acute Pancreatitis (IRAP), *Yaṣṭimadhu kṣīrapāka, Avipatticurṇa, AmlaPitta*, Case report

INTRODUCTION

Pancreatitis is an uncommon disease regulated by inflammation of the pancreas. It is a condition that proceeds abruptly and may be quite severe, whereas patients usually have a complete recovery from an acute attack. Pancreatic inflammatory disease may be classified as Acute Pancreatitis and Chronic Pancreatitis. Acute pancreatitis refers to an acute inflammatory process of the pancreas, usually accompanied by abdominal pain, elevations of serum pancreatic enzymes and imaging evidence of pancreatic and peripancreatic inflammation. This syndrome is generally a distinct episode, which may cause vacillating degrees of injury to the pancreas, also adjacent and distant organs. Acute recurrent pancreatitis on acute

pancreatitis varied from 10-30% depends on etiological factors[1]. The cardinal symptoms include epigastric pain which may radiates to back, with nausea or vomiting. As the known causes of AP are usually taken care of, RAP commonly occurs in the idiopathic group, which composes 20%– 25% of cases of AP[2]. Idiopathic RAP (IRAP) is the failure to reveal the distinct etiology of pancreatitis in contempt of thorough history and conventional laboratory investigations. Despite, there is no unanimity on the duration of an "acute attack", as pancreatic parenchymal changes being oedema and fluid collection may endure after the normalization of pancreatic enzymes and determination of patient's symptoms[3]. The causes of IRAP can be together into mechanical, toxic-metabolic, anatomical, and miscellaneous. Sphincter of Oddi dysfunction is included under Mechanical causes and constitutes about 1/3 of all cases of IRAP. The mechanism of sphincter of Oddi dysfunction is not completely known but, in theory, when an individual has SOD, the sphincter goes into "spasm", causing temporary back-up of biliary and pancreatic juices, resulting in attacks of abdominal pain. The main cause of SOD dysfunction is papillary stenosis. There is a backup of bile and pancreatic juices, when the hole is overly tight, can result in abdominal pain and/or jaundice. Likewise, blockage to the pancreatic orifice can cause pancreatic pain or attacks of pancreatitis. The main symptom of SOD is abdominal pain and is mainly felt in mid- or right-upper abdomen. Other symptoms include Nausea, Vomiting, Fever, Chills and Diarrhoea.

In Ayurvēda, the condition was assessed based on the dōṣa concept as the detailed disease description is unavailable. Among three dōṣa (Bodily humors), pitta is responsible for digestion, metabolism, production of heat and other forms of energy. Pācaka pitta (subtype of pitta) described by ācārya can be compared with the wide variety of digestive secretions viz. Trypsin, Chymotrypsin, Carboxy-polypeptidase, Pancreatic amylase, Pancreatic lipase, Cholesterol esterase, Phospholipase, Maltase, Pepsin, Gelatinase, Urase, bile, pancreatic juice and intestinal secretions[4]. It performs its function with the help of samāna vāyu, and klēdaka kapha. In sphincter of Oddi dysfunction when samāna vāyu gets vitiated by nidāna, simultaneously khavaiguṇya takes place due tomārgāvarōdha. Which in turn vitiates the pācaka pitta where tīkṣṇa and uṣṇaguṇa of pitta are aggravated because of the involvement of tēja and ap mahābhūta[5]. This heat originated through pancreatic secretion leads some inflammatory responses. It can be assumed that amylase and lipase are the enzymes which are liable to increase in double the quantity, means destruction of pancreatic cells. samānavāyu, pācaka pitta and klēdakakapha may involve in sthānasamśraya at āmāśaya also in pittadharā kala (ġrahaṇī) where simultaneously khavaiguṇya takes place[6]. These changes produce the symptoms of pitta-kaphaāvrutavāta like, arōcaka, chardi, avipāka, klama, utklēśa, amlōdgāra, gaurava and hrt-kaṇṭa. According to Shrikantadatta commendator of Susruta samhita, Amlapitta is a disease mainly due to vitiation of Pitta

(pācaka) but Kapha (klēdaka) and vāta (samāna) are associated. Hence Amlapitta is the disease condition which we can co relate to pitta-kaphaāvruta vāta[7].The understanding of disease pathology as per Ayurveda was the steppingstone for the management. The integrated approach was essential initially to know the prognosis of the disease condition.

PATIENT INFORMATION

On September 4, 2019, a 13year old girl, known case of Idiopathic Recurrent Acute pancreatitis after Acute pancreatitis management came to OPD of Amrita School of Ayurveda with complaints of abdominal pain and nausea. History revealed that, on 28/07/2019 she had developed pain in abdomen and nausea, and the pain relived on bending forwards. She was taken to an allopathic hospital and took symptomatic treatment. However, the symptoms persisted; hence she was referred to higher center. There she was diagnosed as acute pancreatitis with increased serum amylase and serum lipase level. She was admitted and treated with Enzyme replacement therapy. The Serum amylase and Lipase reduced but the abdominal pain, nausea persisted with occasional episodes of vomiting. As these symptoms were not reducing with the given medicines, on 04/09/2019 she came to our hospital for the alternative remedy. Patient has the similar episode of acute pancreatitis occurred four years before and was managed symptomatically. No evidence of familial history and she is with optimum growth &developmental milestones. Immunized as per the schedule with no relevant family history to the present illness.

CLINICAL FINDINGS

Systemic Examination-

→Central nervous system- child was conscious and oriented.

1. Higher Mental Function: INTACT
2. Motor and Sensory system: NAD

→Respiratory system- Normal breath sounds heard and chest was clear.

→Cardiovascular system- Heart was clinically normal.

→Gastrointestinal system-

1. Abdomen – Soft
2. Distension – Absent
3. Guarding – Present on epigastric region.
4. Tenderness – Present on epigastric region.
5. Abdominal mass- No palpable abdominal mass.
6. Organomegaly – Absent
7. Evidence of free fluid- Absent
8. Neurological deficits – Nothing detected.

→Musculoskeletal system – NAD

→Genitourinary system – NAD

Specific examination: Examination of Epigastric and Lt hypochondrium region showed, Pain and tenderness. Muscle rigidity is slightly present over these quadrants of abdomen

TIMELINE

29/07/2019
Onset of symptoms (raised S.amylase, S. lipase) Treated symptomatically complaints

01/08/2019
Diagnosed with USG

03/08/2019
Not responding to the treatment S.amylase raised – referred to specialty center Allopathy treatment started

04/9/2019 *(S.amylasein normal range abdominal pain, nausea persists*

Ayurveda intervention began

21/11/2019
chief complaints began to reduce S.amylase, S. lipase in normal range

06/01/2020 *chief reduced (S. amylase, S. lipase in normal range*

30/01/2020
USG showed normal pancreas without calcification

DIAGNOSTIC ASSESSMENT

An abdominal ultrasound was performed on her initial presentation to her local hospital showed bulky head of pancreas & features of acute Pancreatitis. There were no calculi in Gallbladder, Common bile duct and peripancreatic fluid collection. Laboratory investigation showed raised S.amylase & S.lipase. Laboratory investigations drawn on arrival at the tertiary hospital were significant with raised Amylase & Lipase, but CBC, LFT, RFT, S. electrolytes, Urine analysis remained within normal range. Ultrasonography impression marked elevation of Amylase (265.0U/L) & Lipase (489.7U/L) confirmed the diagnosis of Acute pancreatitis. The patient had a history of two episodes in past 4yearsand no specific aetiology was found hence, it was classified under idiopathic recurrent acute pancreatitis. Ayurveda diagnostic tool was not adopted to diagnose the condition.

THERAPEUTIC INTERVENTION

The patient was managed conservatively with enema and followed by administration of Laxopeg to relieve constipation. Nil per oral was maintained supported with IV fluids in the Tertiary hospital. She was improved with this treatment in 10days and started a soft diet without many symptoms. She patient was stable hemodynamically at the time of discharge. The discharge medication includes Cap Creon 10000 U, 1TID with food, Tab Zincovit 1 OD, Cap Laxopeg 1daily with water, Tab Udiliv 300 g 1-0-1. These medications were prescribed for one month. Serum amylase and lipase levels dropped to 96 IU/L and 178 IU/L, respectively, after 1month of intake of medicines. But the symptoms such as abdominal pain and nausea persists, and she seeks supportive treatment from Ayurveda. Initially she was administered with Yaśtimadhu kśīrapāka (Liquorice milk decoction) 50ml morning on empty stomach, Avipatti churna ½ tsp twice daily before food with ½ glass warm water for 7days and continued for 2 months when patient began to respond to the treatment. During the Ayurveda interventions Cap Creon 10000 U was continued to complete its 2-monthcourse as advised by consulting gastroenterologists. Other medications were withdrawn from the schedule. Ayurveda medicine were selected considering the treatment of principles of Amla pitta and aruci and these are easily dispersible and gives maximum benefit to the patients in short span of time. Yaśtimadhu kśīrapāka reduces acid refux symptoms and provides nutritive benefits to the patient where as Avipatti churna improves taste in mouth.

FOLLOW-UP AND OUTCOMES

Patient was observed after 7days to know the improvements and adverse effects. In the first follow up the nausea reduced and mild improvement in the abdominal pain was observed. Patient was comfortable and was able to take soft foods without the episodes of nausea and vomiting. The medicines were continued for period of 3weeks and looked for S. amylase and S. lipase. They remained 98 IU/L & 39.3 IU/L, respectively. Again, medicines were continued for 1more month &S. amylase & S. lipase remained 95 IU/L & 43.9 IU/L, respectively. At the end of 2months patient was completely relieved with signs and symptoms. She was advisedto stop the medication and observe for the relapse of symptoms. But there was not much relapse of symptoms except few episodes of constipation occasionally. On abdominal palpation the tenderness over epigastric region was completely relieved. After 2months of follow up USG was done, and it showed normal size and echo pattern of pancreas without calcification. The patient has maintained her health and had not experienced a recurrence of acute in past 9months.

DISCUSSION & CONCLUSION

Ayurvedic treatment principles incorporated and prioritized by understating the pathogenesis inmanagement of IRAP, put forward an effective strategy for treating the disease without any untoward side effects in a shorttime. The result after treatment shows reduction in symptoms with normal texture of pancreas without calcifications in ultrasonography. Ailment was initially treated with allopathic management and the

symptoms not subsided with the same were effectively managed later with Ayurvedic formulations.

Idiopathic Recurrent Acute pancreatitis (IRAP) among children is mainly diagnosed with most common gastrointestinal complaints like abdominal pain and nausea. In this presenting case, IRAP was clinically diagnosed with abdominal pain and nausea with a supportive evidence of increased S.Amylase and S.lipase level along with an abnormal abdominal USG. In IRAP, recurrent repeated inflammatory responses may occur with the involvement of Sphincter of Oddi Dysfunction with a doubled level of S.Amylase and S.Lipase, which in turn usually produces the symptoms of *pitta-kaphaāvrutavāta* like *arōcaka* (nausea), *chardi* (vomiting), *avipāka* (indigestion), *amlōdgāra* (belching) and *ruja* (abdominal pain). Hence *amlapitta* is having similar features, its treatment principles can reduce the symptoms that results in brisky recovery of clinical symptoms in IRAP

According to *bhāvaprakāśā*, *Yasthimadhu* is a *pittaśāmaka* drug (pacifying *Pitta*). In *Amlapitta*, it can be used effectively administered due to the *dāhaśāmaka* (pacifying burning sensation) and *Pitta śāmaka* properties of *Yasthimadhu*. *Yaṣṭimadhu* pacifies aggravated *vāta* by the integrity of its *guru* (heavy), *snigdha* (unctuous) and *madhura* (sweet) qualities[8].*Yaṣṭimadhu kṣīrapāka also* found to be effective in reducing epigastric pain due to its *Pitta-vātaśāmaka* property[9]. It pacifies the *pitta*dosha by the virtue of its *madhura* (sweet) and *śīta* (cold) qualities. Due to its *Pitta-vātaśāmaka* property, it could work in *samprāpti vighaṭṭana* of *Amlapitta*.

Glycyrrhizin, a main active component in this ksheerapaka by the activation of NF-kappa B and STAT-3, reduces the development of acute inflammation. *Yaṣṭimadhu kṣīrapākam* has been specifically indicated in conditions such as ulcer, inflammation, abdominal pain, poison, nausea, vomiting, thirst, tiredness, and diminution of tissues. Glycyrrhizic acid molecule in the extract is the cause of sweetener activity in *Yaṣṭimadhu kṣīrapāka*. During its hydrolysis, 18-beta-glycyrrhetinic acid is released, which is responsible for anti-inflammatory, antispasmodic, and cytoprotective activity, also it regulates the exocrine functions of pancreas. Glycyrrhizin, a triterpenoid saponin in *Yaṣṭimadhu kṣīrapāka*, is found to be decreasing production of serum amylase and lipase, which are the important mediators in IRAP. The drug *Yaṣṭimadhu kṣīrapāka* prevented the damage of the pancreatic cells which could be caused by the excessive enzyme secretion and thus, it provided a good pancreatic echopattern.

Avipatti churna acts mainly by its *dīpana* (improving appetite), *pācana* (improving digestion) and *Sara Guna* (stool loosing property), which normalizes the vitiated *Pitta* and eliminates the excess *Pitta* (bile/acid) from the body by its laxative action. Research evidences shows that the ingredients of *Avipatticurṇam* possess significant gastroprotective and antisecretory activity. Other cytoprotective effects of *marīca* (Piper nigrum), *pippalī*

(Piper longum), *harītakī* (Terminalia chebula) can also positively acts on the gastric mucosa. *śuṇṭi* (Zingiber officinale) decreases the gastric secretion, increases the mucosal resistance and potentiates the defensive factors of the gastric mucosa. *Lavanga* helps in maintaining the basal gastric mucosal blood flow and it increases the mucus secretion[10]. *Avipatticurṇam* also helps in correcting the *agnimāndhyam* at *kōṣṭa* and *dhātu* level thereby brings the *samānavāyu* to the *prakruta avastha*[11]. The *prakrutasamānavāyu* helps in reducing the spasmodic pain and normalize the metabolism. *Avipatticurṇam* contains drugs with *uṣṇavīrya, kaṭuvipāka* and does the*rasa dhatvagnidīpana*. Which in turn reduces the level of increased serum amylase and lipase. Also the drugs in *Avipatticurṇam* helps in the *klēdaśōṣaṇa* and *karṣaṇa* of*mēdōdhātu* thereby helping in relieved the symptoms of *amlapitta*[12].Thus overall effect of *Yaṣṭimadhu kṣīrapāka* and *Avipatticurṇam* are found to be effective in this case of IRAP with Sphincter of Oddi Dysfunction

The studies have shown that active principles in Yaṣṭimadhu decrease the swelling of mucous membrane in inflammatory gastric conditions. Pharmacological studies also revealed about the action of the ingredients of Avipatti churna exhibit antiulcer properties with harītakī, marīca and pippalī exhibits cytoprotective action on the gastric mucosa. śuṇṭi decreases the gastric secretion, increases the mucosal resistance, and potentiates the defensive factors of the gastric mucosa[13]. The integrated approach in this case was maintained throughout the observation as enzymatic replacement therapy cannot be discontinued/ stopped without completing its course and focused on prevailing associated symptoms with Ayurveda medicines. Thus, the judicial selection of these drugs resulted in alleviation and complete cure of symptoms.

AUTHOR CONTRIBUTIONS

Dr. Soumya M S– PG Scholar, Department of Shalya Tantra (Surgery),
Prepared the case report coordinating with parents of the patient.

Dr.Swathy. S - PG Scholar, Department of Shalya Tantra (Surgery),
Collected andDocumented theprevious treatment details, laboratory, USG reports and documented them in a chronological order

Dr.Jwala Jayaram[3]– PG Scholar, Department of Shalya Tantra (Surgery),
Literary work related to the subject is referred, analysed, and discussed with the consultant

Dr. Rajeshwari. P. N - Associate professor, Department of Shalya Tantra (Surgery),
Doctor who treated the case and summarised the case report

ACKNOWLEDGEMENT

I acknowledge to interns of Amrita school of Ayurveda who helped in preliminary documentation of the case.

REFERENCES

1. Safari et al. Comparing the Roles of EUS, ERCP and MRCP in Idiopathic Acute Recurrent Pancreatitis. Clinical Medicine Insights: Gastroenterology 2016:9 35–39 doi:10.4137/CGast.S37927.
2. Kedia S, Dhingra R, Garg PK. Recurrent acute pancreatitis: an approach to diagnosis

and management. *Trop Gastroenterol*. 2013; 34(3):123-135. doi:10.7869/tg.116

3. Khurana V, Ganguly I. Recurrent acute pancreatitis. *JOP*. 2014;15(5):413-426. Published 2014 Sep 28. doi:10.6092/1590-8577/2417

4. Al-Haddad, M., & Wallace, M. B. (2008). Diagnostic approach to patients with acute idiopathic and recurrent pancreatitis, what should be done? *World journal of gastroenterology*, *14*(7), 1007–1010. https://doi.org/10.3748/wjg.14.1007

5. Harish Kumar Singhal1, Radhey Shyam Sharma, Ayurvedic Management of Acute Pancreatitis- A Case Report, May - 2015 International Ayurvedic Medical Journal ISSN:2320 5091, Volume 3; Issue 5;

6. Rishi Vashishth Et Al: Clinical Study of Chronic Pancreatitis (Tikshnoshna Pitta) Treated with Some Ayurvedic Medicaments. International Ayurvedic Medical Journal {online} 2017

7. Moharana, Pritam & Roushan, Rakesh. (2018). A Critical Review of Samana Vayu in the Modern Perspective. 9. 188-197.

8. Ghosh K, Baghel MS. A clinical study to evaluate the role of *Doshik* predominance in the management of *Amlapitta*. *Ayu*. 2017;38(1-2):15-23. doi: 10.4103/ayu. AYU_75_14

9. Dr. Rajeshwari.P. N et al: Yasthimadhu Ksheerapmaka in Gastro-Esophageal Reflux Disease.

10. Anoop A S1, Lakshmiprasad L Jadhav and Sreelakshmi.P, An Open Label Single Arm Clinical Study on the Combined Effectiveness of Chitrakadi Vati and Avipathi Churnam in the Management of Hypothyroidism, Int J Ayu Pharm Chem 2019 Vol. 10 Issue 1 www.ijapc.com 192 [e ISSN 2350-0204]

11. Kotteswari, M & Prabhu, Kailash & Ram, Mudiganti& Ram Krishna Rao, Mudiganti & Ahamed, A & Balaji, Thotakura & Dinakar, Shruti & Sundaram, Raman. (2020). The gas chromatography-mass spectrometry study of one Ayurvedic formulation avipathichurnam. 2020.

12. Pragya Singhal. Effect of virechana karma (purgation) alone and with avipattikarachoorna&shankhabhasma in treatment of pittajaparinamashoola (peptic ulcer). Ayurpharm Int J Ayur Alli Sci. 2016;5(10):128-136.

13. Gyawali, S., Khan, G. M., Lamichane, S., Gautam, J., Ghimire, S., Adhikari, R., &Lamsal, R. (2013). Evaluation of anti-secretory and anti-ulcerogenic activities of avipattikarchurna on the peptic ulcers in experimental rats. *Journal of clinical and diagnostic research: JCDR*, *7*(6), 1135–1139.

CORRESPONDING AUTHOR

Dr Rajeshwari P N

Associate professor, Dept. of Shalya Tantra (Surgery), Amrita School of Ayurveda, Amritapuri, Amrita Vishwa Vidyapeetham. India.

Email: drrajeshwariphd@gmail.com

Source of support: Nil

Conflict of interest: None Declared

Cite this article as

Dr Rajeshwari P N: An Integrated Approach on Management of Idiopathic Recurrent Acute Pancreatitis (IRAP) with Persistantly Increased Serum Amylase In Sphincter of Oddi Dysfunction – A Case Report VI(2): 1724-1731