

A COMPARATIVE STUDY OF PACHAK PITTA & DIGESTIVE ENZYMES

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ABSTRACT: Pachak pitta has been described in many Ayurvedic texts. It is said to be of agneya in nature which is located between the pakwasaya & amasaya, which in modern correlation can be said as the small intestine. The function of pachak pitta is to digest the food materials. So in modern parameter we can say the digestive enzymes as to be the Pachak pitta. The functions of different digestive enzymes has been given described starting from the salivary secretion, the gastric secretion, the pancreatic juice, bile etc. All these enzymes aids in digestion in different part of GIT. Similarly the pachak pitta is also said to perform the digestive function in intestines. After breakdown of the food into the simpler absorbable form they are eventually distributed to the whole body for the nutrition of each and every tissues & cells. It is mentioned that part of the Pachak pitta is also present in the tissues & cell¹. So again the digestion process is carried out at the tissue or cellular level by the respective dhatu agnis. Therefore we can say that the pachak pitta is the digestive enzyme that is located in the intestine that helps in digestion, & also in the cellular level to give proper nutrition in the cellular level.

KEY WORDS: Pachak pitta, Pakwasaya, Amasaya, Enzymes, Pakti

INTRODUCTION: Ayurveda is the time proven science that has been considered to evolve since time immemorial. Along with the treatment principles of various diseases Ayurveda has taught us the way of daily regimen, seasonal regimen etc, so that we can maintain a healthy & long life. To maintain the proper health the proper regimen of healthy food with due regard of time and season is also described. The great scientists of Ayurveda has described about the pachak pitta as the main factor for all the digestive process inside our body in their texts like Charak Samhita, Susruta Samhita, Astanga etc. The digestive fire or the pachak pitta maintains the longitivity of our body by different functions. The modern physiology has made a vast description about the enzymes, digestion & absorption. It is seen that our Ayurvedic texts has given us the description about the digestion, absorption etc of different food we take. The idea of nutrition of our body tissues & elements are also very beautifully shown through Ayurveda. After studying about both the modern & ayurvedic physiology of digestive enzymes & digestion etc, here we have tried to make a comparative study of both the modern & ayurvedic view.

AIMS & OBJECTIVE:

1. To understand the concept of pachak pitta & its functions.
2. To understand the digestive enzymes & its function in digestion.
3. Comparative study of pachak pitta & digestive enzymes.

MATERIALS & METHOD: Ayurvedic texts along with the available commentaries, modern physiology texts, electronic medium search in internet.

DISCUSSION: The term digestion means chemical breakdown of the food materials. For this digestion many exocrine glands (having duct) of the GIT (eg; salivary glands, gastric glands, pancreas, small intestine etc) are responsible. These glands secrete their respective juices & aids in digestion.

1. *The salivary secretion;* keeps our oral cavity moist all the time. The salivary amylase (ptyalin) & lingual lipase helps indigestion.
2. *The gastric juice;* The Hcl converts pepsinogen to pepsin & also has bacteriostatic actions. This pepsin digests the protein. The bicarbonates along with the mucus protect the GIT epithelium. The intrinsic factor helps for absorption of Vit B12.
3. *The Pancreatic juice;* consists of inorganic matters like Hco₃ & organic matters (enzymes) like trypsin, chymotrypsin, etc. The pancreatic enzymes breakdown the protein to form peptides. Digests the starch to form maltose, maltotriose & α-limit dextrin. Hydrolyzes (splits) the triglycerides into monoglycerides & fatty acids. Splits phospholipids (like lecithin), cholesterol esters, DNA & RNA to produce nucleotides.
4. *The Bile;* is necessary for the digestion & absorption of fats by emulsifying it, & keep cholesterol in solution form².

Location and function of pachak pitta^{3,4,5}; The pachak pitta is located between the pakwasaya & amasaya (ie ksudrantra=small intestine). It is agneya in nature. It performs the digestive function & hence called as agni (digestive fire). It digests the food materials & separates the rasa & mala-mutra. By residing in its place it helps & gives power to the other pittas. The digestion of the food materials by jathara agni (digestive fire) is called pakti⁶.

Importance of pachak pitta; The food materials which nourishes, gives strength, complexion, energy etc to the body, is mainly due to the digestive fire. Because, without proper digestion, the rasa, rakta, mamsa etc dhatus are not formed⁷. The span of life, complexion, energy, health, happiness(utsaha), anabolism(upachaya), blaze(prabha), oja(bodily humour), splendor(teja), bodily

fire(bhuta agni and dhatu agni) & life (prana) are maintained in a normal state due to the normal functioning of the digestive fire (pachak agni or jathar agni). Any abnormality of digestive fire or pachak pitta will cause diseased state of a person. For this reason agni is considered main factor for life (ayu), energy, complexion etc.

*Bhuta Agni*⁷; There are five bhuta agnis ie; Bhouma agni (Parthiva agni), Agneya agni, Vayavya agni (Vatava agni) & Nabhasa agni (Akashiya agni). These five bhuta agni digests their respective parthiva, apya, agneya, vayavya, & akashiya portions of the food materials. The digested material digested by the respective bhuta agni by its qualities nourishes its respective dhatus. Thus the parthiva ahar guna nourishes the parthiva guna, apya ahar guna nourishes the apya guna & respectively for other gunas. And this is how the whole body is nourished.

*Digestion process of the food*⁷; The food which we eat is taken to the stomach (amasaya) by the action of pran vayu. The kledak kapha residing in stomach crushes the food inside the stomach & make it soft. The digestive fire (pachak agni) with the help of saman vayu digests the food material. The ahar ras (essential part) & fecal part is produced & separated.

CONCLUSION: The digested food, which reaches the amasaya, is distributed to the whole body by the help of dhamanis. This gives us the idea that absorption of food takes place from adho-amasaya ie small intestine, through the pitta dhara kala or mucosal layer & distributed through the dhamanis or blood vessels⁸. The seat of Agni or pachak pitta is above the nabhi or umbilicus, & also the grahani⁷. The kala present in the grahani, amasaya & pakwasaya is called pitta dhara kala. The main function of the grahani is to take the eaten food & help in digestion by supporting the pachak pitta. The pitta dhara kala makes available the pachak pitta, ie its function is to secrete⁹. The pitta dhara kala bears a very close resemblance to the mucosal layer of the small intestine or adho amasaya. This pitta dhara kala is also a secreting & absorbing structure¹⁰. The kayagni increase causes the depletion of dhatus & viceversa. So we can say that part of the Agni or pachak pitta is present in sharira dhatus or tissues and cells¹. The digested food material (anna ras) reaches the whole body through the dhamanis. After reaching the target cells and tissues the dhatus of body are nourished by the help of the dhatu Agni. The rasa dhatu agni acts on the poshak rasa dhatus & the produced nutrient nourishes the rasa dhatu. Likewise rakta dhatu Agni acts on poshak rakta dhatu & the produced nutrient nourishes the rakta dhatu. In this way all the respective dhatus ie; rasa, rakta, mamsa, medo, asthi, majja, & sukra dhatus are nourished with the help of their respective dhatu agnis¹¹.

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