ABSTRACT
Ahara containing Shad Rasa undergo Pachana (digestion) at different levels in order to nourish the Dhatu. In Ayurveda, the process of digestion take place in two stages, namely, Avastapaka and Nisthapaka. Avastapaka is the stage in the state or form of Ahara in the Amashaya and Pakvashaya in the course of digestion. This includes three stages i.e. Madhura Avasthapaka, Amla Avasthapaka and Katu Avasthapaka. Nisthapaka or Vipaka is conversion of Ahara Rasa into state of assimilation. Jataragni initiates and maintains Pachana of Ahara into Ahara Rasa. The Ahararasa then gets absorbed to respective dhatu by the action of Dhatwagni and Bhutagni. Variations in this process lead to various diseases. Hence, the stages and process of Ahara Pachana karma plays a vital role in maintaining the state of health.

KEYWORDS
Avastapaka, Agni, Digestion
INTRODUCTION
In Ayurveda, Ahara is considered as one among the Trayopastambha\(^1\). Ahara maintains and supports Deha Dhatus, Ojas, Bala and Varna with the help of Agni\(^2\). The ingested Ahara has to get digested to undergo absorption. Every food particle should undergo different stages of digestion in order to convert macro nutrients into micro particles to aid easy absorption. Factors like Agni, Ahara Parinamakara Bhavas, Ahara Vidhi Visheshayatana and Ahara Sevana Vidhi contributes to this process. Hence, all these factors collectively maintain the process of digestion leading to Utpatti of Prakruta Dosha thereby achieving Dhatu Poshana. In contemporary science, digestion and absorption of carbohydrates, proteins, fats, electrolytes, vitamins, minerals etc occur at different levels in GIT along with the formation of metabolic end products. This complete process involves secretions from endocrine glands, enzymes, acids etc. Variation in these alters the normal physiological process and paves way for manifestation of pathological conditions. Avastapaka is synonymously referred as Prapaka, whereas, Nistapaka as Vipaka or Visistapaka.

AIMS AND OBJECTIVES
To understand physiological and pathological implication of Avasthapaka in the light of contemporary knowledge of digestion.

MATERIALS AND METHODS
Concept of Avasthapaka explained in Charaka Samhitas, Sushruta Samhitas, Astanga Hrudaya and Madhava Nidana, with commentary is reviewed in consideration to physiological and pathological aspects in the light of contemporary science.

DISCUSSION
The act of digestion is bestowed by Agni instigating function of Pachana. Factors like Ahara Parinamakara Bhavas\(^3\) namely Ushma activates enzymatic action essential for digestion. Vayu drags food to abode of Agni by movement of food in GIT and further divides the food particle. Kleda helps in disintegrating coarse food material into finer particles. Sneha softens food, Kala contributes by retaining food for the purpose of admixture with the enzyme and allied appropriate movements of GIT, Samyoga contributes to proper combination of food articles. Outcome of digestion depends on Ahara Vidhi Visheshayatana \(^4\) such as Prakruti (nature of the food e.g.,...
Guru/ Laghu), Karana (processing method), Samyoga (combination of the food), Rashi (quantity of food), Desha (habitat), Kala (time, season and age), Upayoga (dietetic rules), Upayokta (consumer) and Ahara Sevana Vidhi. The concept of Avasthaapaka is explained in Charaka Samhita, Grahani Chikitsa Adhyaya. Initial stages of digestion are referred to as Avasthapaka or Prapaka. Physiology of Madhura Avathapaka commences from oral cavity under the influence of Bodhaka Kapha. During this, the ingested Ahara is subjected to different initial phases of digestion. The first stage of digestion takes place in Mukha and Urdwa-Amashaya. The Ahara possessing Shad Rasa is subjected to digestion. Madhura Rasa is considered as Adhya Rasa undergoing digestion. Madhura Rasa is predominant of Prithvi and Jala-mahabhuta thereby results in Udirana (excited/ elevated/ increased) of Phenabhuta Kapha, a physiological entity (Prakruta). This process is collectively known as Madhuravasthapaka.

In contemporary science, digestion begins from oral cavity by salivary enzymes secreted from parotid gland, eventually digesting carbohydrates. Starch breaks down into disaccharides and other small polymers of glucose. Probably 5% of starch gets hydrolyzed by the time the food is swallowed. Further, starch digestion continues in the fundus (Urdwa-Amashaya) and body of stomach as long as one hour before the food is mixed with the stomach secretions. Then activity of salivary amylase is blocked by the acidity of gastric secretion (pH-4), prior to which 30-40% of starch will be hydrolyzed and forms Maltose.

Pathophysiological contribution of Madhura Avasthapaka is traced as follows. When a person excessively indulges in Kaphakara Ahara, Madhuravastapaka predominantes, compared to other two stages of Avasthapaka leading to formation of excessive Kapha. In Sthoulya indulgence in Ati Sampurna, Ati Madhura, Sheeta, Snigdha, Ayyaayama, Divasvapna, Shleshmakara Ahara, Achinta etc leads to production of excess Kapha Dosha. As a consequence excessive nourishment of Dhatus like Rasa, Mamsa, Medas occurs inducing Vruddhi of these Dhatus. The Ativruddha Medo Dhatu causes Marga Avarana and results in Sthoulya.

Fasting followed by excessive eating, Vishamasana (irregular food habits), Asatmya Bhojana (unwholesome food), Guru (heavy), Seeta (cold), Snehadi Vibramat (improper oleation therapy). All these results in production of excess of Kapha during the Madhura Avasthapaka.
resulting in *Agni Dushti* thereby manifest *Ajeerna Lakshana*\(^\text{12}\).*

**Amla Avasthapaka:** After completion of *Madhura Avasthapaka*, food undergoes second stage of digestion, *Amla Avasthapaka*. Food enters *Adho Amashaya*, undergoes *Amlapaka* with action of *Pachaka Pitta* and leads to formation of *Vidagdha Ahara*. This *Vidagdha Ahara* can be interpreted as *Pakva-Apakva Ahara*. The partly digested food evokes generation of *Accha-Pitta*\(^\text{13}\).*

In contemporary science, the food after undergoing digestion in oral cavity and fundus of the stomach, attains semisolid form (chyme) in stomach and duodenum, here protein and fat digestion take place. When food enters body of the stomach the activation of Peptic enzymes (pepsin pH 2 and gastricsin pH 3) take place, these enzymes acts on protein in acidic environment, hence gastric glands secretes large amount of HCl (pH 0.8). By this time, food gets mixed with stomach contents, the pH ranges around 2-3 and is highly favorable range of acidity for pepsin and gastricsin activity, capable of digesting essentially all different types of proteins in the diet. One important features of pepsin digestion is its ability to digest collagen. Pepsin initiates the protein digestion, usually by providing only 10-20% of total protein digestion to convert the protein into proteases, peptones and few polypeptides. Most protein digestion occur in upper small intestine i.e. duodenum, jejunum under the influence of pancreatic secretions (Trypsin, Chymotrypsin, Carboxypolypeptides) and form amino acids\(^\text{14}\).* A small amount of triglycerides is digested in the stomach by lingual lipase. First step in the fat digestion is to break fat globules into smaller size so that the water soluble digestive enzymes can act on globule surface, this process is called emulsification of fats\(^\text{15}\).* It is achieved under the influence of bile. Any variation in process of *Amla Avasthapaka* leads to manifestation of metabolic diseases. Such as *Amlapitta, Vidagdhaajeerna, Chardhi* etc

Patients with *Amlapitta* indulge in Viruddha Bhojana, Vikruta Bhojana, Atyadhika Amla and Vidhahi Anna resulting in digestion predominating with *Amla Avasthapaka*. Thus, *Pitta Dosha* predominates more, due to *Amla Vipaka*, leading to the formation of *Vidghata Pitta*, resulting in *Amla Bhavata* and *Amlodgara*, and finally causes the disease *Amlapitta*\(^\text{16}\).*

**Katu Avathapaka:** After *Amlaavashta Paka* food enters final stage of digestion in *Pakvashaya* with meager action of *Agni*, undergoes *Shoshana* and attains *Paripindita Rupa*, with predominant of *Katu Bhava*, thus generating *Vata Dosha*\(^\text{17}\).*
In contemporary science after the digestion of protein and fat, digested food enters large intestine where the mucosa of large intestine is capable of absorbing sodium actively along with water and electrolytes. Abundant salts, insoluble calcium phosphates, high bicarbonate and water constitute the feces. Due to the movement of chloride and other negatively charged ions out of colon into intestinal fluid, little amount of water is also lost with the feces. Bacilli which are present in the absorbent colon helps in the digestion of small amount of cellulose. Other substances formed as result of bacterial activity are vitamins K, vitamin B12, thiamin, riboflavin and various gases that contributes to flatus. Any variation in this stage leads to conditions where involvement of Vata Dosha is predominant, such as Udavarta, Vibanda, Grahani etc.

Examples- If the person indulges excessively in Visamaasana, Ruksha Ahara, Atilanghana, Alasya, Ratri Jagarana, Ati Vyavaya, Vegadharana, Chinta etc it leads to disturbance of Katu Avasthapaka leading to Dushana of Vata (apana) resulting in Vibanda. Excessive use of Kashaya, Katu, Tikta, Ruksha Bhojana, Vegadharana, Langana etc kindles digestion predominating with Katu Avasthapa, resulting in disease Udavarta due to Dushana of Apana Vata.

Nidanas like, Ajeerna, Vishamasana, Asatmya Guru, Sheeta, Ati Ruksha, Abhojana Atibhojana, Samdushta Bhojana leads to the disturbance of Katu Avasthapaka resulting in Dushana of Vata (Samana) leading to Grahani Roga21.

Indulgence in food article of Atidrava (excessive watery), Snigdha (unctuous), Lavana (salty), Atimatra (excess quantity), Akala Bhojana (untimely food habits) etc results in the predominance of Madhura Avastahapaka during the process of digestion. Thereby Kapha Dosha will generated excessively in this phase then physiological limit, with association other Doshas the excess Kapha Dosha is throughout forcefully causing disease Chardi.22

Overview on Avasthapaka in the light of commentaries of Samhitas: Rasa performs important function in Avasthapaka. In the initial stage of digestion, Kapha Dosha is generated due to Madhura Bhava. Because of Kapha Vruddhikara Guna, Madhura Avasthapaka predominates in stage. If the Guna in food are Katu, Laghu, Tikshna etc Copious Pitta is formed. If the food is predominated with qualities like Sheeta, Madhura, Guru etc only small amount of pitta is generated. Hence Guna of Ahara contributes in Udirana of Doshas in different stage of
digestion. This holds good for all the stages of Avasthapaka.

Ahara containing Shad Rasa, undergo digestion irrespective of the qualities such as Madhura, Amla, Lavana, Katu etc, Kapha dosha Udirana take place during the Madhura Avasthapaka, Pitta Dosha and Vata Dosha Udirana take place during Amla and Katu Avasthapaka respectively.

It is not necessary that food should come in contact with Agni to undergo Avasthapaka, default location of Kapha and other Dosha are fixed. Bhava like Madhura Bhava, Amla Bhava etc permanently exist in default location, these Bhava are responsible for food to turn into stages and generate Kapha and other Doshas.

Madhura Rasa in Koshta located above Hrudaya, replenishes kapha dosha and contributes to Shareera Bala. Amla Rasa expressly located between Nabhi and Hrudaya and by default Pitta gets replenished there. Katu Rasa particularly located below Nabhi Pradesha and by default Vata gets replenished there.

**CONCLUSION**

Aharapaka Karma occurs in different stages of Avasthapaka. In each stage specific Bhava predominates leading to formation of Doshas. From this article clear contemporary understanding of Avasthapaka is established. Further in Madhura, Amla and Katu Avasthapaka Madhura, amla, Katu Rasas predominates and results in Udirana of Kapha, Pitta, Vata Doshas, respectively. These maintain physiological homeostasis. If this Physiological Homeostasis is disturbed then it leads to Vaishamya of Doshas, which play a definite role in the Samprapti (pathogenesis), leading to manifestation of Vyadhi. Hence all care should be taken to follow dietetic rules explained in Ayurveda Samhitas to maintain Physiological homeostasis and thereby avoid occurrence of disease.
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