Neutraceuticals in Ayurveda with special reference to Avaleha Kalpana

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Abstract: The use of Neutraceuticals has drastically risen in recent years. Dr Stephan De Felice coined the term Neutraceuticals from “nutrition” and “pharmaceutical” in 1989. Related terms are “functional food” and “dietary supplement”. In Ayurvedic pharmaceutics there are some secondary preparations like Avaleha Kalpana (Medicated semisolid preparation), Asavarista Kalpana (fermented preparation), Sneha Kalpana (Medicated fatty preparation), Ksheerapaka Kalpana (Medicated milk preparation) etc. which can be correlated with Neutraceuticals. In this paper “Neutraceuticals” and “Avaleha Kalpana” have been correlated and discussed.

Key words: Neutraceuticals, Functional food, Avaleha Kalpana

Introduction:

The Neutraceutical is defined as “A food or a part of food that provides medical or health benefits including the prevention and treatment of a disease”. However in market the term Neutraceutical has no regulatory definition. So Neutraceuticals not only supplement the diet but also aids in the prevention and treatment of a disease or a disorder. The “functional foods” are those, which are cooked by scientific intelligence. These foods provide required amounts of vitamins, fats, proteins, carbohydrates etc. needed for health e.g. dietary products, citrus fruits etc. The “Dietary supplements” are those products which are intended to supplement the diet like the vitamins, minerals etc. in the form of a pill, capsule, tablet, or liquid form.

In Ayurveda there is a special branch of pharmacetics called Bhaishajya Kalpana dealing with formulation of medicines. In this branch there are basically two types of formulations i.e. Primary formulations and Secondary formulations. Primary formulations include the five basic formulations like Swaras (Expressed juice), Kalka (Paste), Kwatha (Decoction), Hima (Cold infusion), and Phanta (Hot infusion). The Secondary formulations include the preparations like Avaleha Kalpana (Medicated semisolid preparation), Asavarista Kalpana (fermentative preparation), Sneha Kalpana (Medicated fatty preparation), Ksheerapaka Kalpana (Medicated milk preparation) etc. These are called as secondary preparations because these are prepared by using one or many primary formulations along with other substances.

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Avaleha Kalpana (Medicated semisolid preparation) can be considered as Neutraceutical because it is used in the prevention, treatment of disease and for healthy person to maintain his health. As this formulation is licked so it is termed as Avaleha. It is defined as “A semisolid preparation which is prepared by reboiling of decoction etc., till it solidifies and attains signs of proper cooking.¹.

Essential ingredients:
Drava Dravya (liquids): like Kashaya (decoction), Swarasa (expressed juice) and Phanta (hot infusion) etc.

Madhura Dravya (sweetening agents): like jaggery, sugar, sugar candy and honey etc. On the Doshic predominance for Vata Dosha – Guda (jaggery) Pitta, Sharkara (sugar or candy) Kapha, Madhu (honey) are used as sweetening agents.

Prakshepa Dravya (Additives): These are added in Avaleha to increase the potency. It can also increase the palatability of drugs. They are of two types as Kasthoushadhis (herbal) and Rasoushadhis (metallic). Some examples are given in table 1.

Sneha Dravya (fats): like ghee, oil etc.

Quantity of ingredients: Generally it is found mentioned as per the formulation and if the quantity of any ingredients is not mentioned the general ratio is as¹

| Ingredient     | Ratio |
|----------------|-------|
| Sita (sugar)   | 4     |
| Guda (jaggery) | 2     |
| Drava (liquid) | 4     |
| Churnas (powder) | 1 |

Vessels:

Today stainless steel vessels should be used to prepare Avaleha. In classics the different types of vessels to prepare Avaleha as listed in table 2.

Duration required:
Ghrita (medicated ghee), Taila (medicated oil) and Guda (jiggery) preparations should not be prepared in one day. Because of this it gains some important properties. In classics there are references available that after final preparation of the Avaleha (medicated jam) it should be kept in certain place for certain days for maturation. References are listed in table 3.

Siddhi Lakshanas:
There are two types of Paka Lakshanas (chief desired characteristics) they are Assannapaka Lakshanas, those that are seen before Paka and Siddha Lakshanas, those which are seen after completion of Paka. These have been listed in table number 4 as per various references.

Matra (dose) of Avaleha:
Dose of Avaleha varies from 1 Karsha (12g) to 2 Palas (96g)¹. So the dose can be decided by the physician after seeing the severity of the disease and the digestion capacity of the patient². This is to ensure that it should not be interfere the normal diet of the person.

Anupana:
These are the Drava Dravyas (liquids), which are to be taken after consuming Avaleha. These help in proper absorption even as it exerts clinical effect on the doshas in varying degress. The commonly used Anupanas are milk, sugarcane juice, green gram soup¹. Other Anupanas are also recommended different Avalehas as shown in table number 5.
Avaleha Sevana Kala (Time for consuming Avaleha)
In diseases affecting the supra – clavicular region, Avaleha should be taken in the evening and in disease affecting the lower parts, it should be taken before food. Sometimes it is advised in the morning in enhancing absorption and systemic effects.

Saveeryata Avadhi (Shelf life):
It has a shelf life of one year if properly preserved.

Discussion:
In Ayurveda basically there are two types of formulations i.e. Primary formulations and Secondary formulations. Avaleha Kalpana is considered as a Secondary formulation. It is a preparation, which is prepared by reboiling of the Kwatha (decoction) etc. until it becomes semisolid. It includes the ingredients like Churnas (powders), Kalka (soft paste), sugar, jaggery, honey, ghee, taila (oil), honey etc. as per the need of the condition of the diseases and patients. Honey should be added after self cooling of the preparation. The Avalehas may be of two types on the basis of use of liquids. It includes both fatty and non-fatty substances. The fats like ghee, sesame oil, castor oil etc. have been used depending on the dosha involved. Non-oily substances like milk, cow’s urine, sour gruel are added to counteract specific doshic imbalances. Sweet substances used in preparation of Avaleha on the basis of Dosha are jaggery in Vata Dosha, sugar in Pitta and honey in Kapha Dosha. Intention of adding Prakshepa (additives) in the respective formulation is to increase the potency and palatability. The utensils used commonly cooling are stainless steel vessels. But there are references in classical texts to use different types of vessels to achieve achieve qualities. There is also advice to store the final product for a few days in particular place for maturation. The intention behind this could be proper mixing, dissolution, collision, interaction, extraction etc. Siddhi Lakshanas (signs of proper cooking) includes the Asannapaka Lakshanas (near end point signs) and Siddhi Lakshanas (end point signs). The Asannapaka Lakshanas are seen during preparation and Siddhi Lakshanas are seen after preparation. The Tantumatva test indicates the thread consistency and also the sugar content. The two to three thread consistencies recommended for Avaleha indicates the presence of 65% to 70% of sugar in the final product. This percent is sufficient to act as a preservative. Gandha (odour), Varna (color), Rasa (taste) etc. of the drug in final product indicates the proper extraction of drugs in the final product. Dose of Avaleha varies from 12grams to 96grams. This dose depends on the basis of Bala (strength) of the patient and the disease which is left to the physician to decide. Acharya Charaka says that the dose should be such that it should not interfere with the regular daily diet.

Today in the market there are many popular products sold in the name of Neutraceuticals. They contain vitamins, fats, proteins, carbohydrates, minerals as well as active principles that act in diseases. Chyavanaprasha Avaleha is a popular Avaleha preparation which has an annual market of 200 crore rupees. This formulation is explained in classics to treat the diseases and also can be consumed by a healthy person to maintain the health. It contains nutritional components like carbohydrates, proteins, fats, vitamin c, minerals like iron, calcium, magnesium, phosphorous etc.

Conclusion:
Avaleha Kalpana can be compared with Neutraceutical but not with functional food or dietary supplement. The components like medicinal drugs along with jaggery, sugar, honey, ghee, oil, milk etc. fulfills the needs of Neutraceutical i.e. both nutrition and pharmaceutical effects. Avaleha contains proteins, carbohydrates, minerals, vitamins and fats along with pharmacologically active substances.

Tables:

Table 1

| Avaleha          | Prakshaipa          | References         |
|------------------|---------------------|--------------------|
| Kamsaharetaki    | Vyosha (Piper longum, Piper nigrum, Zingiber officinalis) | Cha. Chi. 12/50    |
| Kushmanda        | Pippali (Piper longum) | Ga. Ni. 5         |
| Darvyadi Leha    | Louharaja (Iron powder) | Cha. Chi. 16/17   |
| Brahma Rasakriya | Kanaka(Datura metel), Rajata (Silver), Tamra (Copper), Pravala (Pearl) Bhasmas (ash) | Cha. Chi. 1        |
| Haritaki Leha    | Shu. Manashila (purified Realgar) | Cha. Chi. 18      |
| Vidangadyavaleha | Louha Bhasma (Ash of iron) | Ga. Ni. 5/135     |
| Madanakameshwara Modaka | Abhraka Bhasma (Ash of Mica) | Sa. Yo. 4         |
| Tila Pippalayadi Modaka | Louhamakshika Bhasma (Ash of Iron pirate) | Sa. Yo. 4         |

Table. 2

| Avaleha          | Patra                | References         |
|------------------|----------------------|--------------------|
| Kushmandaavaleha | Tamra (Copper vessel) | Sha. Ma. 8/22      |
| Brahma Rasayana  | Sadhyaoudumbara Patra | Cha. Chi. 1/2 -50  |
| Amrutaprasnhabaveha | Rajata Patra (Silver vessel) | Ga. Ni. 5/296     |
| Agastyahareetaki | Tamramaya            | Ga. Ni. 5/84       |
| Bhallatakavaleha | Loha (Iron vessel)   | Ga. Ni. 5/192      |
| Madanakameshwara Modaka | Jati(Jasminum grandiflorum), Champaka (Michelia champaka), Ketakai (Pandanus odoratissimus) etc | Sa. Yo. 4         |

Table 3

| Avaleha          | Days required                  | References         |
|------------------|-------------------------------|--------------------|
| Yogaraja rasayana| Few days in Dhanyarashi (husk) | Cha. Chi. 16       |
| Brahmrasayana    | Inside Bhumiearthfor 15 days   | Cha. Chi. 1        |
| Amalakavaleha    | Inside Bhumie for 6 month      | Cha. Chi. 1        |
| Amalakavaleha    | Inside Bhumie for 21 days      | Cha. Chi. 1        |
| Kutajavaleha     | In Dhanyarashi for 15 days     | As. Sa.            |
| Rasangsharitakavaleha | In between Madhu (Honey) 1 month | Ga. Ni. 5         |
| Gandarasayana    | Ghrita Lipta Patra (Vessels applied with ghee) for 1 month | Sa. Yo. 4         |
| Shatavari Guda   | 9 nights                      | Sa. Yo. 4          |

Table 4

| Assannapaka      | Siddha Lakshanas             | Ref.  |
|------------------|------------------------------|-------|
| Tantumvatam (thread appearance) | ----- | ----- | Cha. Ka 3 |
| Patie na sheeryvatam (non spreading when put in water) | | | |
| Tantumvatam (thread appearance) | | | |
| Apsumajanimam (sink in water) | | | |
| Na Saranam (non spreading) | | | |
| Darvi Prulepa (stick to laddle) | Sukhamarda (soft to roll) | Chakra.Da. Arsha Bha. Pra. |
| Tantulibhavet (threads) | Sukhasparsha (soft to touch) | | |
| Kshipto Na Plavate (non spreading) | Pidite Bhajate Mudra (finger prints) | | |
| Kshiptastu nischala (motile) | Gandhavarnarasavita (odour, colour, taste) | | |
| Patitastu Na Sheeryatae (non spreading) | | | |
| Tantumvatam (strings) | Peeditemudra (finger prints) | Sh. Sa. 8 |
| Sthiratvam (firm) | Gandhavarnarasodbhava (odour, colour, taste) | | |
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Table No. 5

| Avaleha          | Anupana                                    | Reference               |
|------------------|--------------------------------------------|-------------------------|
| Kutajastakavaleha| Jala (water), Chagadugda (goat’s milk), Manda (gruel) | Sha. Ma. 8/46           |
| Kutajavaleha     | Ajudugda (goat’s milk), Takra (Buttermilk), Dadhi (curd) | Sha. Ma. 8/38           |

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