



PRAGMATIC CRITIQUE ON KARSHYA PERTINENT TO UNDERNUTRITION - A REVIEW

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ABSTRACT

One of the widely spreading conditions in many parts of the world is malnutrition which occurs when an individual gets too few or too many nutrients resulting in health problems specifically it is a deficiency, excess, or imbalance of energy, protein, and other nutrients which adversely affect the body's tissue. Undernutrition is one such condition that falls under malnutrition and can be co-related with karshya in Ayurveda. Karshya is mentioned under Asta Nindita Purushas which occurs due to upashoshita rasa dhatu hence can fall under rasapradoshaja vikara as well. The chikitsa for such conditions plays a very vital role to eradicate and prevent undernutrition in the world by restoring upachaya, roopa and bala since this will be affected in the karshya Purusha. As a country like Africa and continents like Asia, individuals are suffering from severe malnutrition which ultimately leads to death where Africa has the highest prevalence of undernourishment, and it is estimated that 1/3rd of the population is undernourished in 2016. Since this is a burning issue, it needs to be given immediate attention. Hence, this paper attempts to understand the concept of Karshya in different areas to plan the treatment for the triumphant practice.

Keywords: Karshya, Undernutrition, Ninditapurusha, Upashoshita rasadhatu, Prakrutaavastha, Chikitsa

INTRODUCTION

Karshya is an *Apatarpana janya Vyadhi* which is included in *Ashtaninditiya Adhyaya* by *Acharya Charaka*¹ hence *Atikrusha Purusha* is considered as *Nindita Purusha*. This condition is caused due to *upashoshita* rasa dhatu hence it falls under *rasa pradoshaja vikara*. *Karshya* is one of the widest spreading health and nutrition problems which is seen in developing countries. Undernutrition is a possible condition that may be co-related with *karshya*. According to WHO in 2016 462 million adults are found underweight and among children 47 million under 5 years of age are wasted, 14.3 million are severely wasted and 144 million are stunted and 45% of death due to low socioeconomic status noticed in children below 5yrs of age. The country like Africa and continents like Asia individuals are suffering from severe malnutrition which ultimately leads to death. Africa has the highest prevalence of undernourishment, and it is estimated that 1/3rd of the population is undernourished in 2016². The word *Karshya* is derived

from the root *Krish* which means lean, emaciated, weak, etc. The word *Krish* is derived from *Krusha tanu karana dhatu* which means *alpa, sukshma, ksheena*. In *Sushruta Samhita dalhana* had commented on the definition of *karshya* as” *Soatikrusha-ityanenopachayalakshanabalaabhavodarshitah* “which literally means a reduction in *Upachaya, Rupa, and Bala*³. As *Karshya* is one of the major burning issues in developing country like India, hence need proper as well as immediate attention.

Definition Of *Karshya*

The commentator of *Sushruta samhita Acharya Dalhana* has explained the meaning of *Atikarshya* as “*Soatikrushaityanenopachayalakshanabalaabhavodarshitah*” which means the reduction in *upachaya, rupa, and bala*. The other definition of *karshya* is “*Karshyamkrushakaranam*” which means *karshya* is an entity that is responsible for *krushata*.

Understanding *Karshya* in The Form of *Swatantra Vyadhi*

1. Table 01: *Nidana*’s of *Karshya* [Etiology]⁴

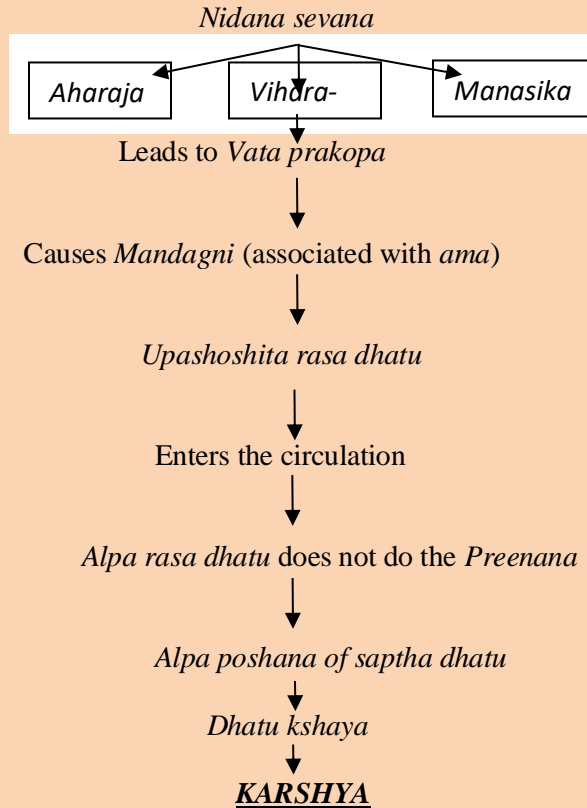
AHARAJA	VIHARAJA	MANASIKA
<ul style="list-style-type: none"> • <i>Kashaya rasa atisevana</i> • <i>Pramitashana</i> • <i>Langhana</i> • <i>Rooksha annapana</i> 	<ul style="list-style-type: none"> • <i>Ativyayama</i> • <i>Ativyavaya</i> • <i>Rooksha udwarthana</i> • <i>Snana</i> • <i>Veganidravini-graha</i> 	<ul style="list-style-type: none"> • <i>Shoka</i> • <i>Bhaya</i> • <i>Atichinta</i>

2. *Roopa* [Clinical Features]⁵

- *Shushka Sphik, Udara, Greeva* (Emaciated buttock, Abdomen, neck region)
 - *Dhamanijalasantatah* (Prominent veins)
 - *Twakasthishesha* (Skin bone appearance)
 - *Sthulaparva* (Prominent joint)
- The patient can’t tolerate

- *Ativyayama* (Excessive exercise)
- *Kshutpipasaoushada* (Hunger, Thirst, Medicines)
- *Atishitoushnamaithuna* (Excessive cold, hot and sexual intercourse)

3. Samprapthi ⁶



The *Nidana sevana* does the *prakopa* of *vayu* which ultimately vitiates the *agni* causing the *agnimandya*, leading to the formation of *Ama*. During the absorption process, the body treats *Ama* as toxic material. *Ama* migrates to the heart and spreads through the rest of the body channels. The qualities of *ama* like *Picchila*, *guru*, *tantumatva* obstruct the minute vessels due to which the nutritive materials cannot reach their destination which causes the malformation of *Dhatu*s. The Produced *alpa rasa Dhatu* cannot do the *preenana* hence there will be chronologically *Alpa poshana* of all *Saptha dhatu*s which causes *Dhatu kshaya* and finally leads to a condition called *Karshya*.

4. Samprapthi ghataka:

- *Dosha: Vata vriddhi*
- *Dushya: Rasa kshaya* leading to *uttarottara dhatu kshaya* (especially *Mamsa, Meda*)

- *Agni: Mandagni*
- *Srotas: Rasavaha, Raktavaha, Mamsavaha, and Medovaha*
- *Dushti prakara: Sanga*
- *Udbhava sthana: Amashaya*
- *Sanchara sthana: Sarva shareera, Rasayanees*
- *Adhishtana: Rasavaha srotas*
- *Vyakta sthana: Sarva shareera*
- *Vyadhi prakara: chirakari*
- *Sadhyasadhyata: Sukha sadhya* in *Naveena avastha. kasta sadhya* in *deergha kaalanubhandhi*
- *Roga marga: Abhyantara rogamarga*

5. Upadrava (Complications)⁷

Pleehavridhi, Kasa, Shwasa, Gulma, Grahani-roga, Raktapitta, Shosha, Udararoga, Arshas, and Kshaya

Table 02: Understanding *Karshya* in The Form of *Prakrutha Avastha*:

Charaka	Sushruta	Ashtanga hrudaya
<ul style="list-style-type: none"> • <i>Vata prakruti</i> • <i>Garbini avasta (5th month)</i> • <i>In vrudha avasta</i> • <i>Desha – jangala</i> 	<ul style="list-style-type: none"> • <i>Vrudha avastha</i> 	<ul style="list-style-type: none"> • <i>Vrudha avasta</i> • <i>Desha – jangala</i>

Understanding *Karshya* in The Form of *Vyadhita Avastha* (Diseased State)

1) *Karshya* as *Nidana* in Different Condition

Eg:

Purishavaha srotodushti – According to Chara-
kacharya

Atisara – According to *Sushrutacharya*

Atisara, jalodara – According to *Vagbhatacharya*

2) *Karshya* as *Poorvaroopa* in Different Condition

Eg:

According to acharya *Charaka, Sushruta, vagbhata,*
and *Kashyapa – Arshas*

According to acharya *Charaka* and *Kashyapa – Gul-*
ma

3) *Karshya* as *Lakshana* in Different Condition

Table 03: Eg

Charaka	Sushruta	Vagbhata
<i>Rasa pradoshaja vyadhi, raktagata vata, sannipataja jwara, Pureeshaja kaphaja krimi, grahani (except kaphaja grahani), udara roga, vatika unmada, vataja moorcha, krusha pramehi</i>	<i>vata vrudhi, rasa pradoshaja vyadhi, jara shosha, grahani, udara roga, krusha pramehi</i>	<i>vata vrudhi, meda kshaya, rasa pradoshaja vyadhi, raktagata vata, vataja moorcha, grahani, vataja gulma, kaphaja krimi. Sharangadhara – vataja nanatmaja vyadhi</i>

Understanding *Karshya* in Contemporary Science: Undernutrition:

It is defined as an insufficient intake of energy and nutrients to meet an individual’s need to maintain good health. Malnutrition can be divided into overnutrition and undernutrition, undernutrition can be further divided into acute and chronic malnutrition. Underweight and wasting are seen in acute malnutrition whereas stunting or poor cognitive development are seen in chronic malnutrition.

The disorders due to malnutrition are PEM is of two types which are kwashiorkor and marasmus. The undernutrition of vitamins is rickets, goiter, anemia, beriberi, pellagra, scurvy, etc.

Assessment:

1. Anthropometric Measures: Such as BMI, Height, weight, head circumference, mid-arm circumference, waist circumference, hip circumference, triceps skinfold thickness, and elbow breadth.

BMI Classification:

Lethal in females - <11kg/m²

Lethal in males- <13 kg/m²

Severe malnutrition- <16 kg/m²

Moderate malnutrition- <18.5 kg/m²

Normal- 18.5-24.9 kg/m²

Overweight– 25-29.9 kg/m²

Obesity-(1)- 30-34.9 kg/m²

Obesity-(2)– 35-39.9 kg/m²

Obesity-3(extreme obesity)- 40 kg/m²and above

2. Dietary Assessment:

a. 24h dietary recall

b. Food frequency questionnaire

3. Clinical methods

4. Biochemical assessment:

a. Hb%

b. ESR serum albumin and serum pre albumin

c. Serum total iron-binding capacity

d. Prothrombin time

e. Serum creatinine

f. Blood urea nitrogen

g. Stool examination

Understanding Karshya from other perspective:

- Unexplained weight loss: - loss of more than 5% of normal body weight of the individual over 6-12 months or less.

Table 04: Causes

Respiratory disorders Eg: COPD	Cardiac disorders Eg: chronic ischemia, chronic congestive heart failure
Infections Eg: HIV, TB	Gastro intestinal disorders Eg: malabsorption, pernicious anemia
Psychiatric Eg: Alcoholism, depression, eating disorders	Endocrine and metabolic Eg: hyperthyroidism, diabetes mellitus

Patient approach:

a. **Table 05:** In children – upto 16yrs of age

Acute	Chronic	Propable understanding of Ayurveda
<ul style="list-style-type: none"> ▪ Diarrhea ▪ Vomiting 	<ul style="list-style-type: none"> ▪ Anaemia ▪ Chronic fever ▪ Malnutrition ▪ Malabsorption syndrome ▪ Worm infestation 	<ul style="list-style-type: none"> ✓ <i>Sadhya ksheena</i> ▪ <i>Atisara</i> ▪ <i>Chardi</i> ✓ <i>Chira ksheena</i> ▪ <i>Ksheerapa</i> ▪ <i>Ksheerannada</i> ▪ <i>Annada</i> ▪ <i>Pandu</i> ▪ <i>Jwara</i> ▪ <i>Balashosha</i> ▪ <i>Phakkaroga</i>

b. **Table 06:** In adults and middle age – 18 to 60yrs

Acute	Chronic	Propable understanding in Ayurveda
<ul style="list-style-type: none"> ▪ Diarrhea ▪ Vomiting 	<ul style="list-style-type: none"> ▪ Cancer ▪ Anaemia ▪ COPD ▪ Celiac disease ▪ Dementia ▪ Depression ▪ Parkinson disease ▪ ischemia ▪ malabsorption syndrome 	<ul style="list-style-type: none"> ✓ <i>Sadhya ksheena</i> ▪ <i>Atisara</i> ▪ <i>Chardi</i> ✓ <i>Chira ksheena</i> ▪ <i>Grahani</i> ▪ <i>Pandu</i> ▪ <i>Jwara</i> ▪ <i>Gulma</i> ▪ <i>Unmada</i> ▪ <i>Kshaya</i>

c. **Table 07:** In old age 60yrs and above

Acute	Chronic	Propable understanding of Ayurveda
<ul style="list-style-type: none"> ▪ Diarrhea ▪ Vomiting 	<ul style="list-style-type: none"> ▪ Cancer ▪ Anaemia ▪ COPD ▪ Celiac disease ▪ Dementia ▪ Depression ▪ Parkinson disease ▪ ischemia ▪ malabsorption syndrome 	<ul style="list-style-type: none"> ✓ <i>Sadhya ksheena</i> ▪ <i>Atisara</i> ▪ <i>Chardi</i> ✓ <i>Chira ksheena</i> ▪ <i>Grahani</i> ▪ <i>Pandu</i> ▪ <i>Jwara</i> ▪ <i>Gulma</i> ▪ <i>Unmada</i> ▪ <i>Kshaya</i>

Table 08: Screening tests for evaluation of unexplained weight loss:

Initial testing	Additional testing
<ul style="list-style-type: none"> ○ CBC ○ FBS & PPBS ○ LFT & RFT ○ Electrolytes ○ Urine analysis ○ TSH ○ Chest x-ray 	<ul style="list-style-type: none"> ○ HIV Test ○ Endoscopy ○ CT ○ MRI ○ Recommended cancer screening ○ Stool for occult blood ○ Colonoscopy

▪ Eating disorders:

Table 09: These are characterized by a severe and persistent disturbance in eating behavior which causes psychological and sometimes physical impairment.

Types	Sub types	Diagnostic criteria
Anorexia nervosa	<ul style="list-style-type: none"> * Restrictive type * Purging type 	<ul style="list-style-type: none"> ✓ Recurrent binge eating ✓ BMI- 18kg/m² to 25 kg/m² ✓ Extreme weight control behaviour
Bulimia nervosa	<ul style="list-style-type: none"> * Non-purging type * Purging type 	<ul style="list-style-type: none"> ✓ Fear of weight gain ✓ BMI- 17.5kg/m² or less

CHIKITSA SUTRA (PRINCIPLE OF MANAGEMENT)

A) AHARA: Navanna, navamadhya, Anooopa Udaka rasa, Dadhi, Ksheera, sarpi, Ikshurasa, godhuma, masha, shaali, guda, etc.

B) VIHARA

Swapna, sukhashayya, virama form chinta, vyayama and vyavaya, Abhyanga with taila having snigdha and madura rasa, Snigdha udwartana, Snana, Gandhamala nishevanam, Shweta vastra dharana.

C) OUSHADA: Bruhmana basti with Sneha having madhura rasa, Doing timely doshavasechana, Rasayana prayoga.

SAMANYA CHIKITSA:

a) **NIDANA PARIVARJANA:** The first principle of chikitsa would be nidana parivarjana. Acharya Sushruta has also mentioned that before administering any chikitsa the nidana 's are to be avoided, hence before administering any therapy the nidhana parivarjana is essential to be enforced first so avoiding karshya nidana can be considered as the prime line of treatment.

b) **AGNI DEEPANA:** pachennaamam vanhikruccha deepanam tadyata mishi! //sha sam pra kha 4\1 // In Karshya, the first line of samshamana chikitsa is to improve the proper functioning of Agni.

c) **PACHANA:** Pachetyamam na vanhi cha kuryad taddhi pachanam! Nagakeshara tam vidyath chitro deepanapachanam!! // sha sam pra kha 4/1//

Since ama has an important role in the manifestation of the disease, so to treat Karshya, the prerequisite is to adopt Ama pachana chikitsa.

d) **SAMSHODHANA:** In the context of Atikrusha chikitsa, Acharya Charaka has mentioned timely Doshavasechana should be done on the grounds of Desha, Kala, etc. and Acharya Sushruta has recommended Bruhmana basti having Mrudu, Snigdha, etc properties

Eg: Rajayapana basti, Ashwagandha grita for Anuvasa etc.

e) **SAMSHAMANA:** Shamana therapy is mainly employed in the form of drug treatment according to the severity of disease as well as the condition of rogi.

Eg: Ashwagandha churna, Shatavari churna, etc.

f) **RASAYANA:** The Rasayana, Balya, Bruhmaniya, Jeevaniya type of drugs should be administered

specifically the drug belonging to *Madhuraskanda*, along with that *Ashwaganda*, *Vidariganda*, *Shatavari*, *Bala*, *Atibala*, *Nagabala*, etc according to *Acharya sushruta*.

Some formulations mentioned in our classics are: *Chavanaprash*, *Ashwagandadi lehya*, *Kushmanda avalehya*, etc

4) **VISHISHTA CHIKITSA:**⁹

The patient can be treated in the line of *Sadhyoksheena* and *Chiraksheena* based on the condition.

5) **PATHYAPATHYA**¹⁰

A) AHARA:

- *Navanna*, *Navamadhya*, *Gramya-anoopa audaka rasa*, *Dadhi*, *Ksheera*, *Sarpi*, *Ikshurasa*, *Godhuma*, *Masha*, *Shaali*, and *Guda*.
- The *Ahara Varga*'s mentioned in the context of *Nidana* of *Karshya* can be considered as *Apathya ahara varga*, hence this should be avoided by the patients, on the other hand, the various food having *Bruhmana*, *Balya* property should be consumed these are *Pathya* to the patient. Some of the important *pathyas* used in the treatment of *Karshya* are as follows: -

I. *Shukha varga*: *Shashtika shali*, *Yava*, *Godhuma*

II. *Shimbi varga*: *Tila*, *Masha*

III. *Mamsa varga*: *Mayura mamsa*, *Hamsa mamsa*, *Godha mamsa*, *Chataka mamsa*, *Varaha mamsa*, *Mahisha mamsa*, *Matsya mamsa*, *Rohitha matsya mamsa*, *Koorma mamsa*

IV. *Shaakha varga*: *Kakamachi*, *Utpala*, *Vidarigandha*, *Tanduleeyaka*

V. *Phala varga*: *Kharjoora*, *Mrudwika*, *Phalgu*, *Aamrathaka (pakwa)*, *Naarikela*.

VI. *Dugdha varga*: *Godugda*, *Shaphadugda*, *Mahishadugda*, *Naaridugda*, *Dadhi*, *Ghrita*, *Navaneeta*.

VII. *Taila varga*: *Tila taila*.

VIII. *Ikshu varga*: *Guda*, *Sharkara*, *Ikshurasa*.

IX. *Madhya varga*: *Sura*, *Madhya*

X. *Kruthanna varga*: *Peya*, *Vilepi*, *Mamsarasa*, *Odhana*, *Yoosha*.

DISCUSSION

1. *Karshya* is an entity that is responsible for *Krushata*. It is one of the Nutritional disorders described

in Ayurveda with the nearest correlation to Undernutrition. Acharya Charaka has explained *Ati krusha purusha* as one among *Astaninditiya* (eight despicable people) hence the treatment plays an important role in this *Purushas* to avoid further complications since they are more susceptible to many other systemic diseases like *Pleeha*, *Kasa*, *Kshaya*, *Gulma*, *Shwasa*, *Arshas*, *Udara*, etc.

2. The *Nidana sevana* leads to *Vata vriddi* which leads to *Mandagni*, leading to the formation of *Upashoshita rasa dhatu* which intern causes *Dhatu kshaya* because of a lack of nourishment to *Uttarottara dhatu* which results in *Karshya*.
3. *Pramithashanam* is *Sthokasya ashanam* which is *Akala bhोजना* with less quantity of food. the intake of lesser calories than the body needs will switch the body into survival mode which slows down the metabolism as the body attempts to conserve energy which decreases leptin level intern reduces hunger and causes less nutrition intake which breaks down muscle to use for energy by slowing the metabolism ultimately causes weight loss.
4. The *Shoka* as *Nidana* leads to loss of appetite and reduces the interest in food or activity which causes nutrition deficiency thus leading to weight loss.
5. The person can be *Krusha* due to physiological or pathological condition, if the person's *Krushata* is due to secondary to any *Vyadhi* then first *Nidana parivrjana* should be done after analyzing, treatment should be implemented in the line of *Sadhyoksheena* or *Chira ksheena* or *Shodhana* or *Shamana* based on *Yukti* of *Vaidya*, as it is told treating *Krusha purusha* is better than *Sthula purusha* so one should give keen attention while treating malnutrition.
6. *Karshya* cannot be confined to undernutrition only, in other ways based on the cause we can understand this under the concept of unexplained weight loss and eating disorders such as *anorexia nervosa* and *bulimia nervosa*.
7. The world health organization (WHO) has described malnutrition as a "global problem" having

adverse effects that are of the highest order in developing countries.

8. Preventive measure for the manifestation of the disease is through "nutrition education" which includes encouraging to take supplements that contain cereals, proteins rich food, and fruits, national nutrition programs, etc.

CONCLUSION

Undernutrition which is a form of malnutrition is described in the modern medical sciences is mostly parallel to nutritional disorders explained in Ayurveda like *Karshya*. Though it is more common in children it can even manifest in adults in later stages due to many reasons. Acharya kashyapa has considered *Ahara* as *Mahabhaishajya* i.e the proper nourishment of the body either in the form of positive or negative nourishment is mainly based on *Ahara* here negative nourishment of the body can be considered as *Krushata*. *Krushata* can also manifest as a *Swatantra vyadhi* or a *Upadrava* or *Asadhya lakshana* or *Anindita lakshana*. hence based on these factors the physician should devise the line of treatment. As acharya vagbhata has mentioned “*karshyameva varam sthoulyam na hi sthulasya bhashajam*” i.e treatment of *Krusha purusha* is easier than compared that of *Sthula purusha*. The comprehensive study of these conditions provides insight into different aspects of nutritional deficiency with its hazards. Thus, a proper understanding of *Samprapti* of *Karshya* provides a valuable key for the efficacious management to drift back the *Arogya* in an individual.

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