How Under-Nutrition (Karshya) is Responded to Ayurvedic Treatment: A Case Study

Lakshmi Devi Chauhan∗ and Sudhir Kumar Pani†

†Department of Kaumarbhritya, Parul Institute of Ayurveda, Vadodara, Gujarat, India.

Authors’ contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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Case Study

ABSTRACT

Despite numerous global sensible corrective attempts to provide nutrition, undernutrition (Kaarshya) remains one of the most pressing issues. The bulk of the population in underdeveloped nations is undernourished. It is one of the main causes of death and morbidity in both children and adults. One of the eight components of primary health care in the worldwide campaign for health for all is the promotion of appropriate diet. A person who is malnourished is prone to a slew of problems. It is a condition in which the body’s fat and muscles are depleted. This is why it is critical to treat it to restore the body’s normalcy. With its unique approach to lifestyle management and medication therapy, Ayurveda, with its holistic perspective, can aid with this disease. Swasthavritta (Community Medicine) has a part in Kaarshya management. Ashwagandhadi avaleha acts as an excellent nutritional treatment to alleviate the symptoms of Kaarshya in youngsters. As a result, Ayurvedic therapy for Kaarshya was arranged. After one month of treatment, the patient gained 1.5 kg of weight, and the next month, i.e., the follow-up period, the patient exhibited substantial improvement in weight growth. Other anthropometric measures improved as a result of the therapy. The assessment was carried out over two months.

*Corresponding author: E-mail: laxmichauhan826594@gmail.com;
Aim: To study the effect of Ashwagandhadi avaleha on BMI and weight in karshya.

Materials and Methods: This is a single case study on underweight female. Ashwagandhadi avaleha was given for two months. Anthropometric parameters such as weight, body mass index (BMI), hip circumference (HC) and mid-arm circumference (MAC) and subjective parameters were assessed before and after 2 months.

Result: Significantly increased in weight i.e. 2Kg was observed after two months.

Conclusion: Regular intake of Ashwagandhadi avaleha significantly increases weight and body mass index in Karshya.

Keywords: Under-nutrition; Karshya; Ashwagandhadi avaleha, nutrition.

1. INTRODUCTION

According to contemporary research, Karshya is associated with being underweight. Body mass index (BMI) is a basic weight-for-height metric that is frequently used to categorize adults as underweight, overweight, or obese. It is estimated by measuring the in kg by the height in meters square (kg/m²). Underweight people have a BMI of less than 18.50 kg/m² and have a reduced risk of co-morbidities, but their risk of other clinical problems is higher. A typical person's BMI is from 18.50 to 24.99 kg/m², and they have an average risk of co-morbidities [1].

Diseases attack Atisthula and Atikarshya purushas at all times. Slimming and nourishing treatments are used to treat them. Karshyatwa is less harmful than Atisthula.

"Sthaulyataukarshye varam karshyam samopakarnau hi tau Yadubhau vyadhigacchaeta sthulamevatipeedyet"

Although both of them require therapy.

Aacharya Charakahas stated eight types of Nindita Purushas (undesirable person). Atikarshya Purush is one of them. Rooksha annapan (consumption of dry food and drinks), Langhana (fasting for long time), Pramitashana (taking very less quantity of food), Kriyaatiyaga (excessive panchakarma therapies), Shoka (grief), Vega nidra vinigraha (suppression of natural urges including sleep), Rooksha udavartana (dry powder massage), Snana (repeated bath), Prakruti (heredity), Jara (old age), Vikaranushaya (continued illness due to some disease) and Krodha (anger) are the causes of karshya [2].

Ayurveda is known as the "science of life." The ultimate goal of Ayurveda is to help every human being in maintaining and promoting health, as well as preventing illnesses, which are the greatest inhibiting factor to achieving dharma. The medication Ashwagandhadi Avaleha is specifically used in the treatment of karshya, as described in Sahasrayogam [4].

1.1 Aim and Objectives

1. To study the effect of Ashwagandhadi avaleha on Karshya.
2. To study the effect of Ashwagandhadi avaleha on BMI and weight.

2. MATERIALS AND METHODS

2.1 Case Report

A 6-year-old female child came with complaints OF loss of weight for 2 months and Associated complaints include loss of appetite, general weakness for 15 days. The patient was healthy 3 months back. Gradually he developed loss of appetite & general weakness in the body. For that, he consulted local doctor and took allopathic treatment but could not get any relief. So for further management, patient was admitted to Ayurveda hospital for further treatment.
Table 1. Personal history

| Personal History          |                                                      |
|--------------------------|------------------------------------------------------|
| Dinacharya               |                                                      |
| Time of getting up in the morning | At 6 am                                             |
| Face wash including tooth brushing (Mukha prakshalana) | One daily                                           |
| Attaining toilet, Bowel evacuation habit (Vagothsarga) | Use to evacuate daily                              |
| Doing Physical exercise (Vyayama) | Not performing                                |
| Taking Breakfast         | Tea, biskit, poha, upma                              |
| Afternoon regimen (Madhyanya charya) |                                                      |
| Lunch (Madhyana bhojana) | Roti & subji/ rice with daal                        |
| Night regimen (Ratri charya) | For many days patient is having disturbed sleep     |
| Rules & regulations while intake o food (Bhojana vidhi) | Not followed                                        |
| Nutritional status       | Poorly built and poorly nourished                   |
| Family History           | All family members are said to be healthy           |

Table 2. General examination

On Physical examination of the patient, the following characteristic features were noted

| General examination |                                                      |
|---------------------|------------------------------------------------------|
| B.P                 | 100/70 mm of Hg                                       |
| Pulse               | 90 pulse/min                                          |
| Temperature         | Afebrile                                             |
| R.R. rate           | 24/min, clear.                                        |
| Weight              | 16 kg                                                |
| Height              | 114 cm                                               |
| BMI                 | 12.31 Kg/m2                                          |
| Assessment of Nutritional Status |                                                      |
| Anthropometric assessment |                                                      |
| Mid-arm circumference | 14 cm                                                 |
| Chest circumference  | 55 cm                                                |
| Abdominal circumference | 25 cm                                               |
| Waist-Hip Ratio (W:H ratio) | 0.20 cm                                         |
| Mid-thigh circumference | 26.5 cm                                 |

Table 3. Dash vidha pariksha

| Dash vidha pariksha               |                                                      |
|-----------------------------------|------------------------------------------------------|
| Prakriti Pariksha                 | Vata-Pitta vikriti                                   |
| Doshya Pariksha                   | Vata vruddhi, Pitta-kapha kshaya                   |
| Dooshya Pariksha                  | Rasakhsaya leading to uttarottara dhatu kshaya especially mamsa & meda |
| Saatmya Pariksha                  | Madhyam                                             |
| Satwa Pariksha                    | Madhyam                                             |
| Saara Pariksha                    | Rasa Sara                                           |
| Pramana Pariksha                  | Height-114cm, Wt-16kg                               |
| Samhanana Pariksha                | BMI-12.31 Kg/m2                                      |
| Vyayama Shakti Pariksha           | Avara (Poorly Built)                                 |
| Aahara Pariksha                   | Abhyavarana Shakti-Madhyam Jarana Shakti- Madhyam   |
| Vaya Pariksha                     | Baal i.e. 6 yrs                                     |

Table 4. Ashta Sthaana Pariksha

| Ashta Sthaana Pariksha           |                                                      |
|----------------------------------|------------------------------------------------------|
| Naadi Pariksha                   | 90/ min, Praakruta                                   |
| Mala Pariksha                    | 1-2 times/ day, Regular                              |
| Mutra Pariksha                   | 2-3 times/ day                                       |
| Shabda Pariksha                  | Prakrutha                                            |
| Sparsha Pariksha                 | Prakrutha                                            |
| Jivha Pariksha                   | Nirama (Alipta)                                      |
| Akruti Pariksha                  | Poorly built and poorly nourished                    |
Table 5. Samprapti ghataka

| Samprapti ghataka | Dosha       | Vata-pittaja |
|-------------------|-------------|--------------|
|                   | Dooshya     | Rasa, Mamsa, Meda |
|                   | Agni        | Jatharagni (Manda & Vishama) |
|                   | Ama         | Jataragni mandhya janya Ama |
|                   | Srotodushti Prakara | Sanga |
|                   | Udbhva Sthaana | Amashaya |
|                   | Vyakta Sthaana | Sarva shareera |
|                   | Sanchara Sthaana | Sarva shareera, rasayanees |
|                   | Vyadhi bheda | Chirakari |

- **Diagnosis:** The patient was diagnosed as **Kaarshya** (undernutrition)
- **Plan / Management of the disease (Chikitsa yojana):**

  1. Adopting *chikitsa sootra* explained by *ayurveda* in *this disease context*:
  2. Treating with *pathya ahara* – *viharai* in *respect to this disease*:

**Treatment planned:** *curative treatment (shamana oushadhi chikitsa)*

1. **Chitrkadi vati** 1-0-0-1 before lunch
2. **Tab- Liv-52 D.S** 0-0-1-0 before lunch
3. **Ashwagandhadi avaleha** [5]

15mg divided into two doses with milk; two times a day, early morning & evening time.

**Type of food/diet planning (Ahara pravicharana):**

1. Lagu ahara/ Snigdha ahara / Dwikaalika ahara / dravottara ahara is advised.
2. Advice to follow Ahara vidhi Vidhana correctly

Table 6. Food/diet to be consumed (Ahara roopi Pathya)

| Food / diet to be consumed (Ahara roopi Pathya) |
|-----------------------------------------------|
| In Shooka Dhaanya varga (cereals)              | Dhanya, Yava, Godhuma |
| In Shimbhi dhanaya varga (pulses)              | Mudga, Soya |
| Mamsa varga (in non-veg)                      | Jangala-anooapa–udaka praanija mamsa rasa (kruta) |
| Go-rasa varga (in animal product)              | Go-dugdha & ghrita |
| Jala varga (in water)                         | Sukhoshna jala / kwathita jala |
| Shaaka varga (in vegetable)                   | Paalakya, Methika |
| Taila varga (in oil)                          | Tila taila |
| Phala varga (in fruits)                       | Draaksha, Dadima, Kushmanda |
| Vyanjana varga (various dishes)               | Jeeraka, ajamoda……. |

Table 7. Viharai roopi pathya

| Viharai roopi pathya:   |Vyayama| Playing/loosening exercises / walking |
|-------------------------|-------|--------------------------------------|
| Abhyanga                |       | With Mahamasha taila / Tila taila etc |

Table 8. Apathya ahara

| Apathya ahara:       |
|----------------------|
| Rookshya ahara       |
| Rooksha paana        |
| Pramitashana         |
| Upavasa              |
Table 9. Follow up results

| Follow up | Follow up |
|-----------|-----------|
| **After one month (14-09-2020) .....** | **After two months (14-10-2020) .....** |
| Anthropometric assessment: | Anthropometric assessment: |
| Mid arm circumference 15.2 cm | Mid arm circumference 16.3 cm |
| Chest circumference 56 cm | Chest circumference 56.4 cm |
| Abdominal circumference 27 cm | Abdominal circumference 28 cm |
| Mid-thigh circumference 27.2 cm | Mid-thigh circumference 28.3 cm |
| Ht—114.2cm (constant) | Ht—114.2cm (constant) |
| Wt – 18kg | Wt – 20 kg |
| BMI= 13.80kg/m² | BMI= 15.34kg/m² |
| Aharashakti pareeksha: Pravara | Aharashakti pareeksha: Pravara |
| Vyayamashakti pareeksha: | Vyayamashakti pareeksha: |
| Pravara | Pravara |

Table 10. Diet menu in Kaarshya These diets are subject to change daily, options are provided to patient

| Diet menu in Kaarshya These diets are subject to change daily, options are provided to patient |
|---------------------------------------------|
| **Breakfast** | Godanna/Rasodana/Kheeroddhrita Shaali Go-dugdha/ Mahisha dugdha |
| | Kaddal phala |
| **Lunch:** | Godhooma rotika (2) with Paalakya vyvanjana Annota with Mudga / Masooraa yoosha |
| | Takra |
| **Evening:** | Tea/ milk |
| **Dinner:** | Go-dhooma rotika (2) with kushmanda vyvanjana/methika vyvanjana Annota with Mudga kritayoosha |
| | Go-dugdha ( before retiring to bed) |
| **Nidra** | Gives mental & physical rest |
| | Diwaswapna prohibited |
| | Sleeping time |

2.2 Advised Therapy and its Basis

The different areas of the body (for example, the abdomen and buttocks) are emaciated in Karshya Mansa and Meda dhatu. As an outcome, increased diet is required for the management of Karshya, Mansa, and Meda dhatus. In this example, the patient received only food control and no pharmaceutical therapy. Ashwagandhadi avaleha was used for nutritional management. For two months, this avaleha was taken on an empty stomach in the morning (between 6 and 8:00 a.m.) at the time of breakfast and in the evening (5-7:00 p.m.). The nutritional value of Ashwagandhadi avaleha is extremely high. It is rich in proteins, lipids, carbs, fibers, iron, calcium, and phosphorus. According to Ayurveda, its bala and pushthivardhak [6]. That is why the Ashwagandhadi avaleha was selected for the research. Diet therapy was the only treatment used in this case. The normal range of BMI is 18.50 to 24.99Kg/m².

3. OBSERVATION AND RESULTS

Significantly increased in weight i.e. 2Kg was observed after two months of regular intake of Ashwagandhadi avaleha. Effect of Ashwagandhadi avaleha on weight and Changes in the anthropometric parameters before and after treatment are shown in table number 9. The results were assessed using weight, BMI and other subjective parameters.

4. DISCUSSION

The bulk of people in underdeveloped nations have apalarpana janya vikara ( rasapradoshaja vikara). This is due to a shortage of healthy food and a lack of understanding about its value. Poverty and a lack of personal cleanliness are two major contributing causes to the kaarshya's appearance. Adults may suffer from malnutrition owing to a lack of important nutrients such as proteins, carbs, vitamins, minerals, and other micronutrients. Because Kaarshya patients are prone to infections, therapy should focus on meeting their nutritional needs. The content Aswagandhadi avaleha is a nutritional medicine that has guru, snigdha guna, sheeta veerya, kaphavardhaka, vatashamaka, and brihmana qualities, is cheap, easy to administer, tasty, and may be used for a long time.

4.1 Chitrakadi vati [6]

Because of the use of the active component Chitraka, the formulation was given the name
‘Chitrakadivali’ (Plumbago zeylanica Linn). In Sanskrit literature, the word ‘Chitrakadi’ means ‘fire or Agni,’ since it boosts digestive fire or ‘agni,’ which aids in the removal of ama and the prevention of indigestion and other digestive problems caused by a lack of digestive fire (i.e., Mandagni). The major karmas are Deepana, Pachana, Rechana, Anulomana, Grahi, Shulahara, and Shothahara. The herbal components in the powerful composition assist to maintain the balance of Samanavata and Kapha and play an important role in efficiently cleansing ama from the body, leading to Agni Sandushanam (which improves the digestive power). This increases the rate of medication absorption while also enhancing Dhatwagni. As a result, we can see the role of karma in Chikitsa’s growth.

Liv 52 - Improves poverty by increasing the liver function to secrete more bile, which aids in the digestion of ingested food and hence aids in weight gain. Liv -52 is a potent appetite stimulant, hemopoiesis booster, and anabolic agent.

Aswagandhadi avaleha helps with nidra, utsahahani, ayase shrama, alasyata, dhamanijaala darshana, abhyavarana shakti, jarana shakti, and vyayama shakti. It also raised anthropometric measures such as BMI, abdomen circumference, waist-hip ratio, mid-arm circumference, and mid-thigh circumference significantly.

5. CONCLUSION

As a result, in this situation, Ashwagandhadi Avleha operates on both agni and poshaka rasa. When administered as an anupana through the go-ksheera, it can nourish all the tissues of the body by raising the adya dhatu, ie, rasadhatu. Kaarshya is a chronic illness that requires long-term therapy to be effective. Other than focusing on the treatment elements of this condition, it is recommended that the socioeconomic situation and nutrition education awareness be improved.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline parental consent and ethical approval has been collected and preserved by the authors.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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