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Case Study

EFFICACY OF PAUSHTIKA BISCUIT IN THE MANAGEMENT OF UNDERWEIGHT IN PRESCHOOL AGE GROUP W.S.R. TO KARSHYA- A CASE REPORT

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ABSTRACT

Stunting is a terrible outcome of inadequate prenatal and early childhood nutrition, while wasting is a potentially fatal outcome of insufficient nutrition and/or illness. *Ashta Nindita Purusha* had the *Karshya* disease, according to Charaka Samhita. The principal complaint of a 3-year-old male child who was brought to the *Kaumarbhritya* OPD was that he had not gained weight in the previous year. Clinical examinations revealed that the child weighed 9.6 kg, measured 86 cm in height, had a chest circumference of 49 cm, an abdominal circumference of 45 cm, mid upper arm circumference of 12 cm, mid-thigh circumference of 21 cm, and skin fold thicknesses of 5.2 cm for the biceps and 5.4 cm for the triceps. Additionally, the respiratory, circulatory, and digestive systems were all functioning normally. The child was diagnosed with moderate acute malnutrition (weight for age -2SD in WHO child growth standards 2006) attributable to external sources, i.e., improper diet. The patient received a therapeutic treatment plan in the form of Biscuits. To achieve a proportionate body personality, is the ultimate goal of *Karshya* treatment. *Paushtika* Biscuit has *Madhura Rasatmaka*, *Sheeta Virya*, and *Snigdha* as ingredients. *Vata* and *Pitta*, two *Doshas*, are the root causes of *Karshya*. After twelve weeks of *Paushtika* Biscuit intervention, complaints including *Bhara Avrudhi*, *Kshudhahani*, *Daurbalya*, *Pandutva*, and *Utsaha Hani* showed a 100% recovery. Moreover, improvements

were made to laboratory variables such haemoglobin percent, total red blood cells, total protein, and A/G ratio. This case study demonstrated the efficacy of *Paushtika* Biscuit as a weight-gain program for kids. Components like *Godhuma*, *Makhana*, *Amalaki*, *Atibala*, and *Kharjura* do *Vatashamana* and *Parthiva* and *Apya Bhavas* with their *Balya* and *Brimhana* characteristics may boost *Kapha* and *Rasa Dhatu*. They also increase *Abhyavaharana Shakti*, correct digestion, and *Avikrita Rasadhatunirmana*. *Shunthi's Srotoshodhaka* property aids in channel cleaning and enhances *Dhatu's* circulation. *Amalaki*, *Guduchi*, and *Yashtimadhu* all have *Rasayana* properties that boost immunity and overall wellness.

KEYWORDS- Underweight, *Karshya*, *Paushtika* biscuit

INTRODUCTION

Healthy nutrition enables children to survive, grow, develop, study, play, participate, and make a greater contribution to society. Humans are known to suffer from a variety of syndromes, including communicable, metabolic, hereditary, and nutritional deficiency disorders. Nutritional diseases are by far the most common in the world, with protein-energy malnutrition being the most common. Undernutrition is a condition characterized by insufficient intake, poor absorption, and needless nutritional loss. Malnutrition encompasses both undernutrition and overnutrition. However, when it comes to undernutrition, the terms malnutrition and protein energy malnutrition (PEM) are sometimes used interchangeably¹. Nutritional status is a sensitive indicator of population health. Malnutrition is the most common health and nutritional issue in impoverished countries. Stunting is a catastrophic result of inadequate in-utero and early infancy nourishment. Stunting affects 144.0 million children under the age of five worldwide². These youngsters begin their lives at a significant disadvantage: they have learning challenges in school, gain less as adults, face difficulty in education, and face barriers to participating in their cultures. In pediatric age, wasting is a life-threatening result of inadequate food intake and/or disease. Children suffering from wasting have decreased immunity, are more likely to experience long-term developmental deficits, and are more likely to die, especially if the wasting is severe. WHO considers malnutrition to be the single most important risk factor for the disease.³ UNICEF, WHO, and the World Bank updated their collaborative database on child malnutrition in March 2020⁴, releasing new global and regional estimates for 2020. Global and regional estimates of wasted, stunted, and overweight children are included in the database. According to the report, 144 million children under the age of five were stunted globally in 2019. In 2019, Asia accounted for 54% of all stunted children, with Africa accounting for 40%. India, along with Nigeria and Indonesia, is one of the three worst countries in the world for high inequalities in stunting, with levels varying fourfold across populations⁵. Between 2000 and 2016, underweight rates for males declined from 66.0% to 58.1% and for girls from 54.2% to 50.1%. Yet, this is still high when compared to the Asian average of 35.6 percent for boys and 31.8 percent for girls.

Furthermore, 37.9% of children under the age of five are stunted, and 20.8% are wasted, compared to an Asian average of 22.7% and 9.4%⁵. The Sustainable Development Goals Index 2019-20 demonstrates India's poor performance on SDG 2. (Zero Hunger by 2030). India's composite score on SDG 2 was the lowest of any SDG. According to the 2020 World Hunger Index, India ranks 94th out of 107 countries, with 14% of the population undernourished. Chronic malnutrition causes stunting, which has long-term consequences for human capital, poverty, and equity. That leads to fewer educational possibilities and hence less professional opportunities, and it remains a significant challenge for Indian youngsters. India is ranked 116th out of 174 countries in the Human Capital Index 2020.⁶ NFHS-5 suggests that the nutritional condition of children under the age of five is deteriorating in numerous states and union territories. Inadequate newborn and young child feeding habits exacerbate the condition. According to the NFHS 5 findings, child stunting (low height for age) has deteriorated in states such as Goa, Kerala, Telangana, Gujarat, and Maharashtra. In Goa, child stunting increased from 20.1 percent to 25.8 percent. In Kerala, stunting has increased from 19.7 percent to 23.4 percent. Stunting increased from 28% to 33.1% in Telangana as well. In Tripura, stunting increased from 24.3% to 32.3%. Gujarat and Maharashtra have experienced a similar trend. Sikkim was the only north-eastern state to improve child stunting by 22.3 percent, and it also had the lowest rate. A similar type of improvement was seen in Bihar, where the stunting rate fell from 48.3% to 42.9%. Child wasting (being underweight for one's height) has become more prevalent in states/UTs such as Kerala, Ladakh, and others. In Kerala, garbage climbed by only 0.1 percent, whereas in Ladakh, waste increased by 8.2 percent. Karnataka, on the other hand, improved, with the waste rate falling by 6.6 percent. In Kerala, the proportion of underweight children increased from 16.1 percent to 19.7 percent (low weight according to their age & height). Telangana also deteriorated by 26.6% to 28.9%. Bihar, on the other hand, improved from 43.9 percent to 41 percent. Substantial increases in child malnutrition and rising levels of anaemia in women and pregnant women strongly suggest that deficiencies may exist in children born between 2015 and 2019. Although India improved in child malnutrition between NFHS 3 (2005-06) and NFHS 4 (2015-16), the country has now taken a turn for the worse in terms of child malnutrition. According to NFHS-4, 36 percent of children under the age of three were underweight, 38 percent were stunted, and 21 percent were wasting in 2015-16. Comparable estimates for NFHS-3 (2005-06) are 46 percent, 38 percent, and 10%, respectively, with rural areas faring worse than urban ones. A kid born to illiterate women and children from the poorest quintile of society are more likely to be malnourished and underweight.⁷

Table No. 1 PRELIMINARY RESULTS OF NFHS-5 (2019-20)⁸, ACCORDING TO STATES:

States	Underweight (%)		Stunting (%)		Wasting (%)	
	NFHS-5	NFHS-4	NFHS-5	NFHS-4	NFHS-5	NFHS-4
Andhra Pradesh	29.6	31.9	31.2	31.4	16.1	17.2
Assam	32.8	29.8	35.3	36.4	21.7	17.0
Bihar	41.0	43.9	42.9	48.3	22.9	20.8
Goa	24.0	23.8	25.8	20.1	19.1	21.9
Gujarat	39.7	39.3	39.0	38.5	25.1	26.4
Himachal Pradesh	25.5	21.2	17.4	13.7	30.8	26.3
Jammu & Kashmir	21.0	16.6	26.9	27.4	19.0	12.2
Karnataka	32.9	35.2	35.4	36.2	19.5	26.1
Kerala	19.7	16.1	23.4	19.7	15.8	15.7
Maharashtra	36.1	36.0	35.2	34.4	25.6	25.6
Meghalaya	26.6	28.9	46.5	43.8	12.1	15.3
Manipur	13.3	13.8	23.4	28.9	9.9	6.8
Mizoram	12.7	12.0	28.9	28.1	9.8	6.1
Nagaland	26.9	16.7	32.7	28.6	19.1	11.3
Sikkim	13.1	14.2	22.3	29.6	13.7	14.2
Telangana	31.8	28.4	33.1	28.0	21.7	18.1
Tripura	25.6	24.1	32.3	24.3	18.2	16.8
West Bengal	32.2	31.6	33.8	32.5	20.3	20.3

Source: National Family Health Survey, 2019-20; the above figures refer Underweight, stunting and wasting. Malnutrition, according to the World Health Organization, can have immediate detrimental health repercussions on the world's youngest and most vulnerable people, particularly children. Malnutrition is frequently blamed, among other things, for around 40% of fatalities among children aged 1-4 in underdeveloped nations; the remaining 50% is linked to another bad health condition. These diseases primarily

affect low and middle-income countries. According to the WHO, every two out of every five children under the age of five, or around 40 million, suffer from stunting, a developmental problem that can cause discomfort and other issues as a kid grows.⁹ Stunting has become one of the primary causes of infant death globally; it not only weakens the immune system and allows infections to spread faster, but it also increases a kid's risk of dying from pneumonia and diarrhoea. These underweight and underdeveloped women are especially vulnerable to difficulties during pregnancy and poor delivery. Low birth weight babies appear to be shorter than typical birth weight adults, resulting in a malnutrition cycle that is passed down to the next generation.

Malnutrition may decrease growth and development, as well as memory and academic performance, putting children at risk of chronic disease. It also costs a lot of lives, thus fighting hunger is essential. India has developed a national food policy in the shape of a nutrition policy. In Indian schools, the government of India administers an Integrated Child Development Service (ICDS) program as well as a national mid-day meal program. Several disorders in the realm of paediatric sciences have no or limited answers in modern medical science. Growth and development are physiological processes because all of the elements that influence them are steady. Underweight arises when these factors are deficient, and it is referred to as *Karshya* in Ayurveda. Many of the Acharyas reference *Karshya* in their writings. From a therapy standpoint, Acharya Charaka identified *Karshya* sickness in *Ashta Nindita Purusha*¹⁰ [8 unfavourable physical constitutions] in Charaka Samhita. In Charaka Samhita Acharya Charaka's spotlight is very much on the fact that *Karshya*, if persistent, contributes to more vulnerability to a number of diseases. These people are not in their usual state of *Dhatusamyā*, i.e. they have less *Dhatus* in quantity and consistency. According to Charaka, four factors are responsible for the growth and development of the body; they are *Kalayoga* (favourable time arrangement), *Swabhava* (nature), *Aharasausthava* (food excellence) and *Avighata* (absence of inhibiting factors). Among the four *Sharira Vriddhikara Bhava*, *Aharasausthava* is more important than the other because it is more responsible for the growth and development of the body. Acharya Charaka also referred to *Aharasausthava* as *Bala Vriddhikara Bhava*. Acharya Charaka also stated that food is the only responsible factor that promotes the growth and development of the body. *Brimhana* is a therapeutic option for the condition *Karshya*. In the proposed study, a recipe with properties of body tissue nourishing (*Tarpana*, *Brimhana*, and *Rasayana Karma*) is given to children in the shape of biscuits. In the proposed study, a recipe with properties of body tissue nourishing (*Tarpana*, *Brimhana*, and *Rasayana Karma*) is given to minors in the edible form of biscuits.

Brimhana is the line of treatment for the disease *Karshya*. In the proposed study a recipe having properties of nourishment of body tissue (*Tarpana*, *Brimhana* and *Rasayana Karma*) is taken for children in palatable form of biscuits. In the proposed study, a recipe having properties of nourishment of body tissue (*Tarpana*, *Brimhana*, and *Rasayana Karma*) is taken for children in palatable form of biscuits.

CASE REPORT-

A 3-year-old male child was brought by her parents to *Kaumarbhritya* outpatient department (OPD), (Registration no. 46917), I. P. G. T. and R. A. Hospital, Gujarat Ayurved University, Jamnagar, Gujarat on December 14, 2021 with the primary complaint of not gaining weight for 1 years and associated complaints of upper respiratory tract infection since last two months. There was no history of psychological or endocrine disease, nor of long-term pharmaceutical use. There was no family history of undernourishment. He had a birth history LSCS, including a pre-term with a birth weight of 2 kg, and no postnatal history of significance. The child's immunization history was full, and their development were normal for their age. He has a history of inappropriate eating practices and hyperactivity. He used to consume vegetarian meals two or three times per day to satisfy her hunger. He had not sought therapy for the aforementioned symptoms. Her parents attended the OPD to inquire about Ayurvedic treatments for her illness. The treatment was initiated on December 14, 2021, with parental approval.

Clinical observations

He had 9.6 kg of body weight (< -2SD weight for age in WHO child growth standards 2006), 86 cm height with 12.97 Kg/m² of BMI, chest circumference 49 cm, abdominal circumference 45 cm, mid upper arm circumference 12 cm, mid-thigh circumference 21 cm, skin fold thickness biceps 5.2 cm, skin fold thickness triceps 5.4 cm. Respiratory rate was 21 breaths per minute, and pulse rate was 94/min. The functioning of the respiratory, circulatory, and digestive systems was normal.

Dashavidha Pareeksha

Child was having *Sharirika Prakriti* (~physical constitution) as *Vata-Pitta* and *Manasika Prakriti* (~ mental constitution) as *Rajasika-Tamasika*; *Vikriti* (~morbidty) was *Vata Dosha*; *Rasa, Rakta, Mamsa, Meda* were *Dooshya*; *Rasa-rakta Sarata* (~essence of all *Dhatus*); *Avara Samhanana* (~compactness); *Avara Pramana* (~anthropometry); *Madhyama Satmyata* (~suitability or homologation); *Avara Satva* (~psyche); *Madhyama Ahara Shakti* (~intake of food) with *Avara Abhyaharan Shakti*.

Eight-fold examination (*Ashtavidha Pareeksha*). *Ashtavidha Pareeksha* showed that her *Nadi* (~pulse rate) was 94/Min, passing of hard stool occasionally; *Mutra* (~urine frequency) was regular, *Jivha* (~tongue) was *Sama* (~coated tongue), *Shabda* was *Laghu Swara*, *Sparsh* (~touch) was *Ruksh*; *Drika* (~eye) was *Pandura* (~pallor), *Akriti* (~built) was *Karshit* (~undernourished).

Sroto Pareeksha (Examination of the channels of the body) *Anne-ashradha, Aruchi, Pandutvam, Krushangta* symptoms were linked to *Rasavaha Srotodushti, Twaka Rukshata* (Dryness of skin) to *Rakta Dhatu Kshaya* and *Raktavaha Srotodushti, Sphika Griva Udara Shushkta* to *Mamsa Dhatu Kshaya* and *Mamsa Dhatu Srotodushti, Udarasth Tanutvam* to *Meda Dhatu Kshaya* and *Meda Dhatu Srotodushti*.

Investigations

Before and after therapy, the percentage of haemoglobin, total leukocyte count, differential leukocyte count, mean corpuscular haemoglobin, mean corpuscular haemoglobin concentration, red blood cell count, total protein, A/G ratio were measured. Prior to therapeutic intervention, the urine routine and microscopic and stool routine and microscopic examination were scanned.

Differential diagnosis

1. Exogenous (as a result of poor diet and lifestyle): The patient had a history of low birth weight, frequent ingestion of a low-calorie diet, restless activity.
2. Endogenous (any systemic disease) – no systemic disease symptom.
3. Psychological disorders: The child was from pre-school age group with a normal Intelligence Quotient (IQ) and no history of psychological issues.

Diagnosis

Based on the foregoing medical history, BMI, anthropometric, and laboratory characteristics, the child was diagnosed with moderate acute malnutrition (weight for age <-2SD in WHO child growth standards 2006) attributable to external sources, i.e., improper diet.

Treatment Protocol-

Therapeutic treatment

The medications from *Paushtika* Biscuit were selected and administered to the patient in Biscuit form. [Table 1] In the Gujarat Ayurved University Pharmacy, content of *Paushtika* Biscuits was collected and preparation of Biscuit has been done in outsourced Bakery of Jamnagar.

Paustika Biscuit

Table No. 1: Ingredients of *Paustika* Biscuit

Sr. No.	Name	Latin Name	Part to be used	Proportion
1	<i>Godhuma</i>	<i>Triticum turgidum</i> var mirabile	Seed	50%
2	<i>Makhana</i>	<i>Euryale ferox</i> Salisb	Fruit	10%
3	<i>Amalaki</i>	<i>Emblica officinalis</i> Gaertn.	Dried Fruit	1 Part
4	<i>Madhuyashti</i>	<i>Glycyrrhiza glabra</i> Linn.	Root	1 Part
5	<i>Mandukaparni</i>	<i>Centella asiatica</i> Linn.	<i>Panchanga</i>	1 Part
6	<i>Guduchi</i>	<i>Tinospora cordifoila</i> Willd.	Stem	1 Part
7	<i>Atibala</i>	<i>Abutilon indicum</i> Linn.	Root & seeds	1 Part

8	Dry <i>Kharjoora</i>	<i>Phoenix dactylifera</i> Linn.	Dried Fruit	1/3 rd of Total
9	<i>Shunthi</i>	<i>Zingiber officinale</i> Roxb.	Rhizome	1/10 th Part
10	<i>Pravala</i>	Coral	<i>Bhasma</i>	1/10 th Part
11	<i>Mandura</i>	Red iron oxide	<i>Bhasma</i>	1/10 th Part
12	<i>Sharkara</i>	-	-	- QS -

METHOD OF PREPARATION:

Drug preparation method of *Paushtika* Biscuit for present study:

- Wheat flour, *Makhana* powder, *Amalaki* powder, *Yashtimadhu* powder, *Mandukparni* powder, *Guduchi* powder, *Atibala* powder, *Shunthi* powder, *Pravala bhasma*, *Mandura Bhasma* was taken in given proportion.
- All these contents were mixed with *Kharjura* and powdered *Sharkara*.
- *Ghruta* was added in this mixture and homogeneous mixture of these entire was made in machine.
- This mixture was spread on clean surface and equal size biscuit were made of this mixture.
- Then these biscuits were arranged in tray in single layer.
- Then these trays were kept in a furnace for 20 min at a temperature of 150 °c
- After confirming that proper baking is done biscuit trays was taken out.
- Efforts were taken to make every biscuit of approx. 10 g.

Table No. 2-Posology of *Paushtika* Biscuit:

Age	3-4 yrs
Dose/Day	1 ½ biscuit (15 Gm)
Route	Oral
Duration	12 weeks
<i>Anupana</i>	lukewarm water
<i>Aushadha sevana kala</i>	<i>Adhobhakta</i>

Paushtika Biscuits Dosage one and half (15 Gm) were administered orally, *Adhobhakta* (after meal) in two divided doses (322) with *Usnodaka* (lukewarm water) as *Anupana* (vehicle) for twelve weeks with weekly followup for eight weeks. Weekly physical examinations were performed for eight weeks.

Assessment criteria

The degree of improvement was evaluated based on the observed percentage reduction in complaints. Standard grading criteria were utilized to evaluate the efficacy of the therapy. [Table 3]

Table No. 3- Criteria for Assessment:

Fat deposition on gluteal, abdominal & neck region	
Normal	0
Moderate	1
Less	2
Very less	3
<i>Dhamani Jala Darshan</i>	
Not visible easily even after pressure	0
Visible & prominent on Pressure	1
Visible without pressure	2
Prominent without pressure	3
<i>Sthula Parva</i>	
Deeply seated with extra fat	0
Covered	1
Prominent	2
Relatively look Larges	3
Appetite	
Child himself asks foods & also take adequately	0
Child himself asks food but not take adequately	1
Child does not ask but takes food considerably by request	2
Child does not take food considerably even by force	3
Sleep	
Long (> 8Hours) & sound	0
Short (< 8Hours) but sound	1
Disturbed	2
Crud	3
Appearance	
Healthy – cheerful	0
No cheerful / Tense looking	1
Old looking / Depressed	2
Ill looking	3

<i>Daurbalya– weakness (less activeness)</i>	
Very active	0
Active	1
Moderately Active	2
Dull	3
<i>Krodha</i>	
No anger even for reasonable cause	0
Gets angry only for reasonable	1
Gets angry even for unreasonable cause	2
Highly irritable for no cause (uncontrollable anger)	3
<i>Shoka</i>	
No sorrow fullness even for reasonable	0
Sorrowful only for reasonable cause	1
Sorrowful only for non-reasonable cause without anybody gesture	2
Most sorrowful for no cause, unable to control his feelings, body gestures present	3
<i>Harsha</i>	
Always joyful & enjoys the life	0
Happy with particulars enjoyable things & company	1
occasionally happy with every enjoyable things & company	2
No happiness by any means	3
<i>Bhaya</i>	
No fearfulness for any cause	0
Fearful only for reasonable cause (occasionally recovers)	1
Fearful even without reasonable cause & by counselling recovers	2
Always fearful & can't not be helped by counselling	3
Physical Activity (<i>Shararika Shrama</i>)	
Excessive playing not tired	0
Excessive playing tired	1
Tired with some physical activity or playing for some time	2
Tired without playing	3

Mental Activity (<i>Mansika Shrama</i>)	
Excessive mental work not tired	0
Excessive mental work tired	1
Tired with some mental work	2
Tired without studying	3
Fatigue	
No fatigue	0
Work full time despite fatigue	1
Patient must interrupt work to rest	2
Fatigue at rest	3

FOLLOWUP, OUTCOME AND DISCUSSION

Karshya is defined as a disorder caused by inappropriate hand hygiene, deprived diet, stress, hyper activity, and ultimate increase in *Vata Dosha* (bio element). Due to *Nidana Sevana* and *Vata Vardhak Aahara- Vihar Sevana*, vitiation of *Vata* creates *Agni Dushti* and it formats *Ama*. The outcome of this pathogenesis produces *Dhatu Kshaya* viz-a-viz inadequate *Rasa Dhatu* and improper absorption of *Ahara Rasa*. This situation ultimately turns into *Shoshita Rasa Dhatu* and *Karshya*.

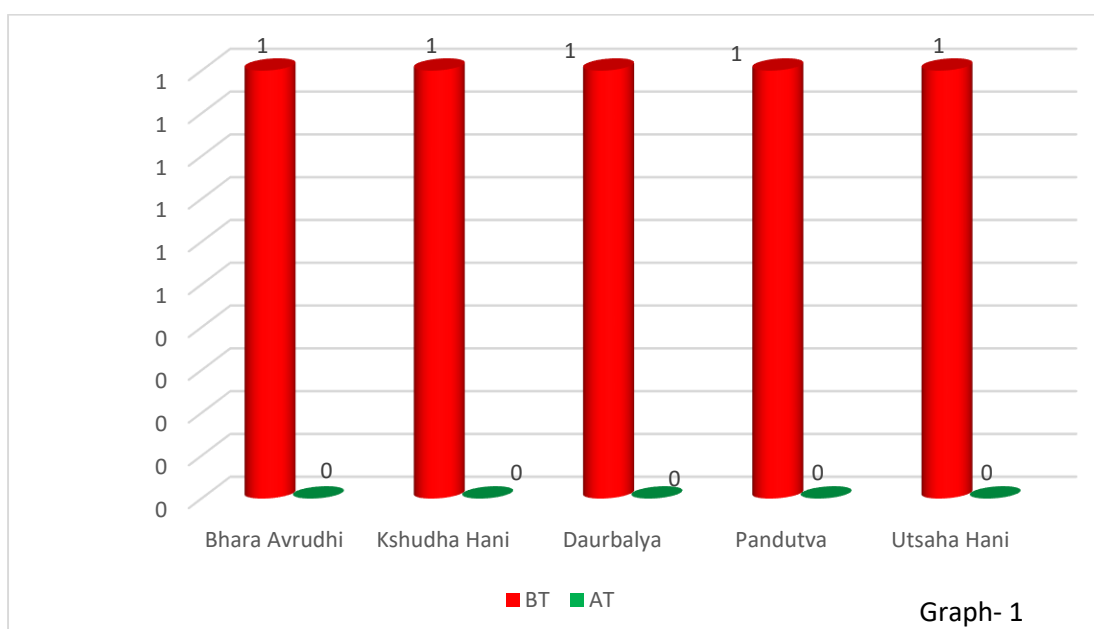
The *Samprapti* of *Karshya* is like this:

Nidana Sevana → *Vata Prakopa* → *Shoshita Rasadhatu* → *Shushka Rasadhatu Anukramati* in *Sarvanga Sharira* → All *Dhatu* do not get nourishment due to *Alpa Shushka Rasadhatu* → *Karshya Utpatti*.

Brimhana refers to the phenomenon of healthy growth of *Dhatu*s, particularly *Kapha*, *Mamsa* and *Meda* leading to proper development and enhancement of different body part. The phenomenon of *Brimhana* can be understood in two stages viz. by means of *Aahara* and *Aushadha*. *Brimhana Dravya* predominantly comprises of *Parthiva* and *Apya Bhava*. Apart from this during the treatment of *Karshya*, one should be cautious that *Brimhana Dravya*'s used in such instances should be *Laghu Santarpana* in nature because already in an emaciated person *Sharirbala* and *Agnibala* are reduced. The ultimate aim of treating *Karshya* is to achieve proportionate body personality. The ingredient of *Paushtika Biscuit* is *Madhura Rasatmaka*, *Sheeta Virya*, and *Snigdha*. *Karshya* is mainly caused by these two *Doshaja* i.e. *Vata* and *Pitta*. *Madhura Rasa* and *Snigdha Guna* pacify the *Vata* and *Pitta*. Many drugs in *Paushtika Biscuit* are *Madhura*, *Sheeta* also pacify *Vata* and *Pitta Dosha* and work as *Balya*, *Brimhaniya*.¹¹ Wheat is a rich source of many vital nutrients such as carbohydrate, calories, protein, fat, minerals (zinc, iron) and considerable proportions of vitamins (thiamine and vitamin. B). Protein and carbohydrate present in wheat are helpful in underweight children. Minerals such

as selenium and magnesium, pantothenic acid, riboflavin, and sugars support to prevent the mineral deficiency in PEM. Similarly, Low fat content, high contents of carbohydrates, protein, and minerals indicate *Makhana* having a property like *Balya* and *Brimhniya*, so it is beneficial for *Karshya*.¹²

After twelve weeks of *Paushtika* biscuit intervention, it was determined that there was complete improvement (100%) in complaints such as *Bhara Avrudhi* (not gaining weight), *Kshudhahani* (loss of appetite) and *Daurbalya* (generalized weakness), *Pandutva* (pallor) and *Utsaha Hani* (lack of enthusiasm) [Graph 1]. The body weight increased by 27.27 %, height increased by 2.27%, mid upper arm circumference increased by 4.76%, BMI increased by 23.88%, skin fold thickness biceps increased by 16.16%, and skin fold thickness triceps increased by 15.26%. [Table 4]. Significant improvement was observed in laboratory parameters, such as 10.74% improvement in haemoglobin%, 3.98% improvement in total red blood cell, 16.25% improvement in total protein, 25% improvement in A/G ratio. (Table 5).



Graph No. 1 Effect of Therapy in complaints

Table No.:4 EFFECT OF THERAPY ON THE ANTHROPOMETRICAL PARAMETER

Anthropometrical Parameter	B.T.	A.T.	Difference	% of Relief
Weight (kg.)	9.6	13.2	3.6	27.27
Height (cm.)	86	88	2	2.27
BMI (Body mass index)	12.97	17.04	4.07	23.88
Chest circumference (cm)	49	49.5	3	6.25
Abdomen Circumference (cm)	45	48	1.344	2.713
MUAC (cm)	12	12.6	0.6	4.761

MTC (cm)	21	22	1	4.54
SFT- Biceps (cm)	5.2	6.2	1	16.12
SFT- Triceps (cm)	5.4	6.4	1	15.625

MUAC: mid upper arm circumference, MTC: mid-thigh circumference, SFT: skin fold thickness

Table No.:5 EFFECT OF THERAPY ON LABORATORY PARAMETERS

laboratory Parameter	B.T.	A.T.	D	% of Relief
Haemoglobin (gm%)	10.8	12.1	1.3	10.74
Total Red Blood Cells (million/cubic)	4.34	4.52	0.18	3.98
Total Protein	7.42	8.86	1.44	16.25
A/G ratio	1.42	1.13	0.29	25.66

A/G ratio: Albumin Globulin ratio

The follow-up study of the patient had shown that there was further increase in anthropometric parameters. *Paushtika* Biscuit which having *Guduchi*, *Mandukaparni*, and *Shunthi* do *Amapachana* and *Agnidipana* by their *Katu*, *Tikta Rasa* and *Ushna Virya* which increase the *Abhyavaharana Shakti* as well as proper digestion and *Avikrita Rasadhatunirmana*. *Godhuma*, *Makhana*, *Amalaki*, *Atibala*, and *Kharjura* do *Vatashamana* by their *Madhura Rasa* and *Madhura Vipaka*. Also, these drugs have a predominance of *Parthiva* and *Apya Bhavas* with their *Balya* and *Brimhana* properties may increase *Kapha* and *Rasa Dhatu* which provide nutrition to other *Dhatu* and has *Vatashamana* property. The *Srotoshodhaka* property *Yashtimadhu* and *Bhedana* property of *Shunthi* helps in clearance of channels and improves the circulation of *Dhatus* and indirectly helps in the nourishment of *Dhatus* means responsible for *Uttarottara Dhatu Poshana*. *Rasayana* property of *Amalaki*, *Guduchi*, and *Yashtimadhu* improves general health and immunity.

CONCLUSION

Ingredients of *Paushtika* Biscuit are easily available and the form of biscuit is palatable. This case study shows that *Paushtika* Biscuit is effective regimen for weight gain in children. It can also be concluded that by following proper diet with *Paushtika* biscuit regimen, healthy weight could be maintained. This case report can be useful in future studies related with childhood undernutrition.

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