



Research Article

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AYURVEDIC MANAGEMENT OF UNDERWEIGHT IN CHILDREN AT A TERTIARY CARE TEACHING HOSPITAL OF SOUTHERN INDIA: A PILOT CLINICAL STUDY

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ABSTRACT

Aim of the study was to evaluate the effectiveness of Ashwagandha ghrita Matra Basti on Karshya (underweight) in children. This study was single arm with pre and post test design carried out at inpatient level in a tertiary Ayurveda hospital attached to teaching institute located in district headquarters in Southern India. 10 children satisfying diagnostic criteria and age 6-10 years were given Abhyanga with Tila Taila and Nadi sweda followed by Matra Basti with Ashwagandha Ghrita (dose as per age) along with dietary advice for 15 days. The patients were followed up after a period of 30 days i.e., on the 45th day. It was found that Matra Basti with Ashwagandha Ghrita showed highly significant results in subjective parameters such as general weakness, state of hunger, activity or interest as well as in objective parameters such as weight in Kg, height in cm, chest circumference, mid arm circumference and B.M.I. Matra Basti with Ashwagandha ghrita proved to be effective for weight gain in children with underweight.

Key words: Matra Basti, Ashwagandha ghrita, under weight, karshya

INTRODUCTION

Under nutrition or under- weight are those who have their expected weight for age to be between (-2) to (-3) SD in growth chart.¹ Underweight is most common in the UN regions of Southern Asia (30%), followed by Western, Eastern, and Middle Africa (20%, 19% and 16%, respectively) and South-Eastern Asia (16%).² One in every three malnourished children in the world lives in India.³ About 50 per cent of all childhood deaths are attributed to malnutrition.⁴ The prevalence of malnutrition varies across states; with Madhya Pradesh recording the highest rate (55%) and Kerala among the lowest (27%).⁵ According to recent data the prevalence of malnutrition in Karnataka is around 41.1%.⁵

In children, the mild or moderate form of nutritional deficiency disorder is considered as karshya.⁶⁻⁷ Karshya being a vata pradhana vyadhi causing dhatukshaya, vatahara chikitsa which is bruhmana and laghu is the main line of treatment. Snehana can be obtained in the body by means of two ways either by Snehapana or by Sneha basti.⁸ Among these two, Basti is said to be the most effective measure to counter act Vata.⁹ Ghrita (medicated ghee) is considered to be the best sneha, which does snehana to the tissues and thus nourishes the body.¹⁰ It acts an anabolic and increases vitality.¹⁰ In children, as palatability of drugs is a challenge, alternate methods were sought for the treatment of Karshya and Ashwagandha (*Withania somnifera* (L.) Dunal) Ghrita as Matra Basti was selected for the study. Ashwagandha ghrita is a formulation specifically indicated for nourishment and increasing vitality in children.¹¹ Ashwagandha Ghrita contains Ashwagandha which has Madhura, Kashaya, Tiktarasa and Kapha-vatashamaka action and is Vataghna, Vrishya, and Mamsavivardhana.¹² Studies have been conducted on the efficacy of Ashwagandha lehya in adults and children,¹³

and on Ashwagandha ghrita orally in children.¹¹ As there was not much promising results from these studies and palatability being a challenge in children, the present study was proposed.

MATERIALS AND METHODS

Objective: To evaluate the effectiveness of Ashwagandha ghrita Matra Basti on Karshya (underweight) in children.

Source of data: Patients were selected successively from the outpatient department of Kaumarabhritya, Sri Dharmasthala Manjunatheshwara College of Ayurveda and Hospital, Hassan, Karnataka. Ethics clearance was obtained from Institutional Ethic committee of SDM College of Ayurveda and Hospital, Hassan (IEC No. SDMAH/IEC/152/13-14 dated 05-04-2014).

Method of collection of data

Diagnostic Criteria: Expected weight for age was the criteria used for diagnosis of children with Karshya (underweight)

Inclusion criteria: Subjects within age group 6-10years irrespective of sex, caste & religion within the weight of 60-80% of the expected weight-for-age were included in the study.

Exclusion criteria: Subjects associated with secondary malnutrition, congenital diseases, inborn errors of metabolism and children who have undergone any serious illness in the past 2 weeks which required hospitalization and antibiotic therapy were excluded from the study.

Research design: 10 patients with Karshya were selected for the study and given Abhyanga with Tila Taila and Nadi Sweda followed by Matra Basti with Ashwagandha Ghrita (dose as per

age)¹⁴ along with dietary advice for 15 days. The patients were followed up after a period of 30 days i.e., on the 45th day.

Assessment criteria: Objective parameters like Weight, Height, Chest circumference, Mid arm circumference and Body mass index were assessed. Subjective parameters like General weakness, state of hunger, Interest in activities, Nidra, Appearance, Constipation, Buccal pad of fat and Academic performance were also assessed with the help of the following scores pre and post treatment (Table 1).

Statistical analysis: The data obtained was tabulated and statistically analyzed using SPSS version 20, Paired sample t test and Wilcoxon-signed rank test.

OBSERVATIONS AND RESULTS

Age wise distribution of registered subjects shows that 20% (n=02) were from 5-6 years, 10% (n=01) each from 6-7 years, 7-8 years, 8-9 years age and 50% (n=05) were from 9-10 years age group. Gender wise distribution showed that 60% (n=06) were males and 40% (n=04) were females. The religion based

distribution showed that 80% (n=08) of the children were Hindus and 20% (n=02) were Muslims. The socio-economic status based distribution showed that 70% belonged to lower middle and 30% (n=03) to upper middle class. Domicile based distribution showed that 60% (n=06) were belonged to urban and 40% (n=04) to rural area. Diet based distribution showed that 70% (n=07) were mixed and 30% (n=03) were vegetarian. Majority of the subjects 60% (n=06) had Mandagni (poor digestive capacity), rest 40% (n=04) had Vishmagni (inconsistent digestive capacity). Observation on presenting complaints showed that 70% (n=07) were with growth failure, 60% (n=06) each with reduced appetite and general weakness, while 70% (n=07) with emaciated buttocks and abdomen. Observation on associated complaints showed that 20% (n=02) were with inability to tolerate hunger and thirst, 40% (n=04) with inability to tolerate heat and cold, 20% (n=02) with skin changes, 50% (n=05) with hair changes and 70% (n=07) with pallor. 60% (n=06) were with recurrent infections. 70% (n=07) were with worm infestation. 60% (n=06) were with reduced concentration.

Table 1: Criteria of assessment

Sl. No.	Domain	Criteria	Grade
1.	General weakness	Dull	3
		Moderately active	2
		Active	1
		Very active	0
2.	State of hunger	Child does not take food considerably even by force	3
		Child does not ask but takes food considerably by request	2
		Child himself asks food but does not take adequately	1
		Child himself asks food and takes adequately	0
3.	Interest in activities	Dull	3
		Involves when forced	2
		Actively involves on motivation	1
		Very active	0
4.	Sleep	Sleeplessness	3
		Disturbed	2
		Short but sound	1
		Long and sound	0
5.	Appearance	Ill at ease	3
		Dull looking	2
		Playful look	1
		Healthy	0
6.	Constipation	Irregular for more than 2 days	3
		On alternate day	2
		Daily but hard stool	1
		No constipation	0
7.	Buccal pad of fat	Cheeks inside with prominent bones	3
		Cheeks inside	2
		On surface level	1
		Cheeks everted	0
8.	Academic performance	Poor performance	3
		Below average	2
		Average	1
		Above average	0

Table 2: Difference in the anthropometrical measurements before and after treatment

Parameters	Mean	SD	SEM	t	Sig. (2-tailed)	Remark
weight BT - weight AT	-1.18400	.67881	.21466	-5.516	.000	HS
height BT - height AT	-1.52000	.82030	.25940	-5.860	.000	HS
CC BT - CC AT	-.90000	.84327	.26667	-3.375	.008	S
MAC BT - MAC AT	-.86000	.62397	.19732	-4.359	.002	S
BMI BT - BMI AT	-.55200	.64393	.20363	-2.711	.012	S

CC – chest circumference; MAC – mid arm circumference; BMI – body mass index; SD – standard deviation; SEM - standard error of the mean

Table 3: Difference in the subjective parameters before and after treatment

Parameters	Z	Asymptotic Significance (2-tailed)	Remark
Daurbalya AT - Daurbalya BT	-2.401 ^b	.016	S
Kshudha AT - Kshudha BT	-2.810 ^b	.005	S
Interest AT-Interest BT	-2.333 ^b	.020	S
Nidra AT-Nidra BT	-1.414 ^b	.157	NS
Appearance AT-Appearance BT	-2.810 ^b	.005	S
Constipation AT- Constipation BT	-2.232 ^b	.026	S
Buccal pad of fat AT- Buccal pad of fat BT	-2.714 ^b	.007	S
Academic AT- Academic BT	-2.732 ^b	.083	NS

The difference in the anthropometrical measurements before and after treatment is detailed in Table 2. The difference in the subjective parameters before and after treatment is detailed in Table 3. It was observed that there was a mean increase of 1.1kg (± 0.6 kg) at the end of 45 days which was seen to be statistically highly significant. An increase in height of 1.5cm was obtained which was statistically highly significant. There was also significant increase in the chest circumference, mid arm circumference and BMI of the children with Karshya. Highly significantly improvement was obtained in the Daurbalya and Kshudha while significant improvement was obtained in Interest in activities, Appearance, Constipation and Buccal pad of fat at the end of 45 days of intervention.

DISCUSSION

Ashwagandha¹⁵ is brumhana, balya and rasayana¹⁶⁻¹⁷ with Madhura Tikta Rasa, Snigdha Guna, Ushna Veerya and Madhura Vipaka having Vata Pitta Shamana¹⁸ and Kapha Vardhaka effect.¹⁹⁻²⁰ Aswagandha Gritha²¹ having deepana property also helps in Agnidipti and Srotoshodhana.²² *Withania somnifera* (L.) Dunal²³ possesses a vast range of pharmacological activities like adaptogenic, anti-inflammatory, antioxidant, antimicrobial, anti-bacterial and immunomodulatory activity.²⁴⁻²⁵ Ghee contains fat which function as a structural element of the cell and is a major source of energy.²⁶ Ghee contains medium chain triglycerides which are immediate source of energy. MCT improves the metabolic rate, spare the muscle glycogen and improves physical endurance performance.²⁷ Acharya says the action of Basti is by the Virya of Basti which is conveyed to Apana and then to the Samana Vata which regulates the function of Agni which in turn regulates the Udana, Vyana and Prana, thus providing its efficacy all over the body.²⁸ At the same time, Basti also restores the displaced Kapha and Pitta to their original seats by which kapha improves the normal growth and bala of the child and pitta restores the impaired agni of the patient. The rectum has a rich supply of blood and lymph supply and drugs can cross the rectal mucosa like other lipid membranes and thus unionized and lipid soluble substances are readily absorbed from the rectum.²⁹ The portion absorbed from the upper rectal mucosa is carried into the portal circulation and that from the lower rectum enters the systemic circulation.³⁰ By virtue of these qualities Ashwagandha Ghrita Matrasti alleviates vata, increases snigdha guna and kindles the dhatwagni especially of Rasa, Mamsa and Medas thus acting as Rasayana.

CONCLUSION

By the administration of Aswagandha gritha Matrasti, highly significant increase can be seen in the weight, height, CC, MAC and BMI of the subjects. Significant improvement was also observed in state of general debility, appetite, interest,

appearance, constipation and buccal pad of fat. Hence, Ashwagandha ghrita Matrasti can be used effectively for weight gain in children with karshya. Utilizing the confidence levels of improvement obtained in this study, larger sample study with comparison to normal growth patterns in underweight children as well as normal children can be taken up for further research.

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