

## Ayurveda

**KEYWORDS:** Becker's Muscular Dystrophy, *Basti*, Panchakarma therapy, *Shashtik Shali Pinda Sweda*,

## TO EVALUATE THE EFFICACY OF YAPANA BASTI AND SHASHTIK SHALI PINDA SWEDANA IN THE MANAGEMENT OF BECKER'S MUSCULAR DYSTROPHY



Volume - 6, Issue - 03, March- 2021

ISSN (O): 2618-0774 | ISSN (P): 2618-0766

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### INTERNATIONAL JOURNAL OF PURE MEDICAL RESEARCH

**Abstract**

There are certain medical disorders which have always posed a puzzle in front of whole medical fraternity. One such case is Muscular dystrophy that has no definite treatment as yet. Duchenne muscular dystrophy (DMD) is one of the commonest Muscular dystrophy. It is life threatening situation & reduces patient's life significantly. DMD (X- linked recessive disorder) is characterized by progressive symmetrical muscle wasting that affects proximal muscles other than distal, often accompanied by calf muscle pseudo-hypertrophy. It is due to mutation in Dystrophin gene. In Ayurveda, it may be correspond under *Aadibala Pravritta Vyadhi* and it happens due to *Bheejabhagaavyava Vikriti* (hereditary) or *Garbhopaghatarabhava* (sudden mutation) leading to *Medo-Mamsavaha Dushti* resulting in DMD like presentation. Ayurvedic Panchakarma treatment may provide an answer for such puzzles. A 32-year-old man approached the OPD of Panchakarma department with the complaint of difficulty in walking and recurrent falls after walking since 7 years. Earlier he had taken allopathic medicine but he discontinued the medicine due to no significant relief. He was advised Panchakarma Therapy with classical *Virechana karma* (Purgation), *Shashtikshali Pinda Sweda* (Red rice Sudation), *Yapana Basti* (Medicated Enema) along with palliative (*Shamana*) treatment. After two month treatment and two month follow-up, it was observed that the patient was satisfied with treatment and changes in the complaints with improved quality of life. Palliative treatment was advised to the patient for additional.

**INTRODUCTION**

Ailments in which there is a primary structural and functional impairment of muscle can result from a variety of inherited and acquired disorders. Commonly, proximal muscle more than distal muscle wasting leads to exertion arising from sitting position, climbing stairs, reaching up for objects, or combing hair. Specific patterns of proximal muscle more than distal weakness may be seen in certain disorders and one of them is muscular dystrophy. It affects every 1: 3600-4000 live male births due to mutation in Dystrophin gene.<sup>[1,2]</sup> Muscular dystrophies are hereditary diseases that cause slowly progressive muscle weakness and characteristic histological abnormalities, including extensive fibrosis degeneration of muscle, and proliferation of fatty and connective tissue. Weakness may be evident at birth or have a late adult onset.<sup>[3,4]</sup> Becker's muscular dystrophy (BMD) is a milder allelic form of dystrophinopathy than Duchene muscular dystrophy, with decreased or altered Dystrophin rather than absence. This characteristically affects males, onset is usually after 12 years of age. Proximal muscle weakness and calf muscle pseudo hypertrophy is common. Elevated CPK level is observed at least five fold.<sup>[5]</sup> The relevance, scope and desirability of traditional and alternate systems of medicine in BMD should be

seen in the light of the fact that the treatment is aimed mainly, it not merely, to improve quality of life while providing symptomatic relief. At present time, there is no particular treatment for BMD in any of the systems of medicine. The firm foundation of Holistic approach on which the whole edifice of Ayurveda is built, has attracted a lot of attention across the globe and demand for Ayurvedic treatment especially Panchakarma has therefore been ever in the increase. Ayurvedic Panchakarma treatment in the form of *Abhyangam* (Medicated oil massage) *Udavartana* (Medicated powder massage) *Virechana karma* (Purgation), *Shashtikshali Pinda Sweda* (Red rice Sudation), *Yapana Basti* (Medicated Enema) had been taken along with Ayurvedic *Shamana* (palliative) treatment management. This innovator methodology had render the patient quality of life and longer survival upon muscular dystrophy.

A 32-year-old man approached the OPD of Panchakarma department with the complaint of difficulty in walking and recurrent falls after walking since 7 years. He was advised classical Panchakarma therapies with *Virechana karma* (Purgation), *Shashtik Shali Pinda Sweda* (Red rice Sudation), *Yapana Basti* (Medicated Enema) along with palliative (*Shamana*) treatment. After two month treatment and two month follow-up, the observations and results shows changes in the complaints with improved quality of life. Palliative treatment was advised to the patient for additional.

**MATERIALS AND METHODS-****Case History-****Chief complaints with Duration:**

- Difficulty in standing from sitting position since 7 year, worsening gradually.
- Difficulty in climbing stairs since past three years.
- Thinning of muscle mass in anterior thigh region since past three year
- Excessive growth at calf region, bilaterally since 1 year
- Tendency to fall down after walking for about a kilometer since 1 year.

**History of present illness:**

According to the patient, he was completely asymptomatic about seven years back. Then he developed mild pain at anterior thigh region of right side which worsened gradually. Thereafter, patient also complained of pain at the anterior region of left thigh in one month duration. Gradually, over a period of three to four years thinning of muscles of thigh region developed which was more pronounced on the anterior aspect bilaterally.

Gradually, patient started having difficulty in standing from sitting position and also had difficulty in climbing stairs along with walking on a sloping surface, upwards. Hypertrophy of calf muscles was present bilaterally. There was no history of weakness in the upper limbs, distally in the lower limbs. No history of numbness, tingling sensation or pain in the lower back was reported.

**Past history**

No significant history of any other long term disease was reported by the patient.

**Personal history:**

Vegetarian food habits, no significant history of addiction was present.

**Family history:**

No history of any close term relative suffering from any long term disease or similar complaints.

**Treatment history:**

Patient had taken allopathic treatment for above complaints in the year 2012 for about 2 year and was diagnosed Becker's Muscular Dystrophy, no improvement was found in complaints. He also had taken *Ayurvedic* treatment, got slight relief in complaints temporarily which later recurred after discontinuation of the treatment. Thereafter he took Physiotherapy and Acupuncture therapy but no significant results were seen.

**Assessment criteria-**

The following parameters were assessed before and after the treatment:

**1) Subjective criteria:**

- Muscle Strength /Power using Medical Research Council (MRC) grading Scale<sup>[6]</sup>
- Circumferential measurements

**Table 1 : Power of muscles using MRC grading scale**

S.No.	Strength/ Power of muscles	Grade
1	Muscle contracts normally against full resistance.	5
2	Muscle strength is reduced but muscle contraction can still move joint against resistance	4
3	Muscle strength is further reduced such that the joint can be moved only against gravity with the examiner's resistance completely removed.	3
4	Muscle can move only if the resistance of gravity is removed	2
5	Only a trace or flicker of movement is seen or felt in the muscle or fasciculation are observed in the muscle.	1
6	No movement is observed.	0

**1) OBJECTIVE CRITERIA**

Bio markers assessed before and after the therapy<sup>[7]</sup>

- Levels of SGOT and SGPT
- Levels of CPK

**Intervention and posology**

The treatment was planned keeping in mind the resemblance of the symptoms to *Medo-Mamsagata Vata* and an *Avarana of Medo Dhata* on *Vata* considering the pathology of the disease wherein there is a pseudo hypertrophy of muscles of calf region. The normal muscular tissue is replaced by a fibro fatty connective tissue. Besides, there is a wasting of muscular tissue leading to thinning and decrease in normal muscle power. Considering this a treatment was planned which aims at removal of *Avaraka Dosha* first followed by *Shodhana* and *Brimhana* therapies.<sup>[8]</sup>

**Table No. 02 :Treatment planning**

S.No.	Panchakarma Procedure	Material Used	Duration
1	<i>Udwartana</i> <sup>[9]</sup>	<i>Triphala</i> and <i>Kolkulaththadi churna</i> .	7 days
2	<i>Snehapana</i>	<i>Mahatikta Ghrita</i>	7 days
3	<i>Abhyagam</i> , <i>Swedana</i>	<i>Dasmool oil</i> , <i>Dasmool decoction</i>	3 days
4	<i>Virechana Karma</i> . <sup>[10]</sup>	<i>Trivrita Avaleha</i>	1 day

5	<i>Samsarjana Karma</i>	<i>Peya</i> , <i>Vilepi</i> , <i>Yusha</i> , <i>Mamsarasa</i>	7 days
6	<i>Karma Basti regimen</i> . <sup>[11]</sup> <i>Niruha Basti</i> <i>Anuvāsana Basti</i>	<i>Mustadi Yapana Basti</i> <i>Bala tail and Dasmool Tail</i>	30 days
7	Along with <i>Basti</i> , <i>Shashtik Shali Pinda</i> <i>Swedana</i> <sup>[12]</sup>	<i>Shashtik Shali rice, milk</i> , <i>Dasmool+bala+Ashwagand</i> <i>ha decoction</i>	30 days

After 30 days of *Basti*, during the follow up period of two months, the patient was advised *Ashwagandhahlehya* 10 gms. twice daily with milk and *Mamsarasa* 100 ml twice daily for two months.<sup>[13]</sup>

**OBSERVATION AND RESULT-****Gait:**

- The patient was able to walk without support. Slightly waddling gait with normally placed steps and normal spacing in between the feet was present. Heel to toe movement was present.
- Patient had difficulty in climbing stairs, moving up a sloping surface and standing from sitting position.
- He had to take support from ground with hands and had to climb up his lower limbs to stand from sitting position (Gower's Sign).
- On sitting from standing position, there was a sudden tendency to fall due to weak antigravity muscles.

**Motor examination**

- Muscle Tone was reduced in both lower limbs, proximally, especially the muscles of anterior compartment of thigh region appeared flaccid. The tone of both the upper limbs was normal.
- Thinning of muscles was present in thigh region bilaterally. The muscles of anterior compartment of thigh region showed prominent thinning.
- Hypertrophy of muscles of calf region was present bilaterally.

**Power in lower limbs**

Muscle power was reduced in the Flexor and Extensor muscles of hip and the Extensor muscles of knee region.

**Reflexes:**

Knee jerk and Ankle reflexes were diminished bilaterally and rest of the deep tendon reflexes were normal.

**Investigations-**

Routine investigations performed were within Normal Limits.

**Specific investigations**

S.G.O.T. 54 U/L  
S.G.P.T. 87 U/L

Muscular biopsy in June 2012, was suggestive of Muscular dystrophy.

Nerve conduction velocity of all four limbs was Normal (May,2015)

EMG Shows Myopathic pattern.

CPK (Creatine phospho kinase)

In July, 2012 672 U/L  
In September 2012 861 U/L  
In July, 2015 1169.7 U/L  
In March 2016 1590 U/L  
In April 2016 2420 U/L

MRI L.S. SPINE, September 2012, showed Normal study

**RESULTS**

The patient was assessed both subjectively as well as objectively during the treatment and after the treatment regimen. As per the patient, there was an improvement in the recurrent falls which he complained of earlier. He was now able to walk for more than a kilometer without falling. However, there was no significant

improvement in his gait and the difficulty which he was having in standing from sitting position. He still had to take support of ground and had to climb his limbs with his hands to stand from sitting posture (positive Gower's sign).<sup>[14]</sup>

**Table No. 03 : Power in muscles Before Treatment and after a month of treatment**

Power in muscles Before Treatment			Power in muscles after a month of treatment		
Muscles	Right	Left	Muscles	Right	Left
Flexors of hip	4	3	Flexors of hip	4	4
Extensors of hip	3	4	Extensors of hip	4	4
Adductors of hip	4	4	Adductors of hip	4	4
Abductors of hip	5	5	Abductors of hip	5	5
Flexors of knee	5	5	Flexors of Knee	5	5
Extensors of knee	3	3	Extensors of Knee	4	4
Dorsiflexors	5	5	Dorsiflexors	5	5
Plantar flexors	5	5	Plantar flexors	5	5

**Table 04 : Measurements after treatment (in cm):**

Measurements Before Treatment			Measurements after a month of treatment		
Measurements	Right	Left	Measurements	Right	Left
4"above ankle	27	25.5	4"above ankle	26.5	25
4"below knee	37.5	37.5	4"below knee	37	37
6"above knee	45	45.5	6"above knee	45.5	46

Thus, there was an improvement in the muscle strength of the Extensor muscles of hip and Knee along with the Adductors of Hip (Table 2, Table 4).

Besides, an improvement in muscle bulk of thigh region (6" above knee) was also noticed. There was a reduction seen in the hypertrophied calf region (4" below knee) in both the lower limbs. (Table 3, Table 5)

During the course of treatment and after the treatment regimen, the levels of CPK were assessed which showed following results:

**Table 6 : CPK level during and after treatment**

S.No.	Treatment	CPK level
1	Before Virechana karma	2420 U/L
2	After Virechana karma	2310 U/L
3	After Basti	1100 U/L
4	After one month of Basti	930 U/L
5	After two months of Basti	1020 U/L

Levels of other enzyme markers after treatment

SGOT – 37 U/L

SGPT – 49 U/L

## DISCUSSION-

There is an abnormal deposition of fatty connective tissue in place of normal muscular tissue in muscular dystrophy. This is due to the deficiency of Dystrophin protein found in Muscular Dystrophy.<sup>[15]</sup> The backbone of treatment decided to increase the muscle mass and strength. Thus, Karma Basti with Bala & Dasmoor tail and Mustadi Yapana Basti was planned for a regimen of 30 days. Before proceeding to the Basti karma, the patient was given Udvartana for seven days and Virechana was given subsequently. It was considered to be an Avrana of Kapha Dosha and Medo Dhatu. Kola-Kulatthadi Powder (300 grams) and Triphala Powder (100 grams) were used for Udvartana Procedure considering the Vatahara and Kapha-Medo Vilayanam properties of Udvartana.<sup>[16]</sup> Virechana Procedure was scheduled for Detoxifying the body, lower tract (including large intestine & rectum) clearance and light feeling before Basti treatment and for the enhanced bio availability of Basti. After Virechana karma, patient was administered Basti with Mustadi Yapana Basti and Bala and Dasmoor tail as Anuvasana Basti for thirty days in a karma basti schedule. The Anuvasana Basti used in the

treatment has a strengthening effect and has been told as Shreshtha Vata disorder destroyer by Caraka and Vagbhata. Mustadi Yapana Basti is the best among Yapana basti that can be administered at all times for the promotion of longevity. Here, it was chiefly selected due to its prompt muscle power toning property and Rasayana (Rejuvenation) effects by providing nourishment at Dhatu level and promoting Agni (digestion power). Swedana has also been indicated in the treatment of Vata disorder. Shashtik Shali Pinda Sweda was done along with Basti (Karma Basti-30 Basti) as external muscle strengthen therapy for one month. The patient was advised Ashwagandhavlehya (10 gm.) twice daily which acts as a Rasayana and meat soup (100 ml.) twice daily for Mamsa Dhatu Nutrition.

The most significant finding during and after the therapy was constantly falling levels of Creatine phosphokinase enzyme. This enzyme is a biomarker of muscle tissue destruction in body. The elevated levels of this enzyme suggest more destruction of muscular tissue. This indicated that along with the subjective improvement in muscle power and muscle mass, the given therapy also reduced the destruction of muscular tissue to a considerable extent. After a constant fall in the levels of CPK enzyme during the treatment, the level of this enzyme was again elevated when recorded after two months from completion of the Basti regimen. The new levels were 1020 U/L. This indicated that there was once again a destruction of muscular tissue due to the progressive nature of the disease. However the condition of the patient subjectively was still the same i.e. there was an improvement in falling while standing or walking.<sup>[17]</sup>

## CONCLUSION-

After two months of Panchakarma treatment there is significant subjective improvement in complaints and drop in the markers like CPK and SGOT and SGPT levels. There was an improvement in recurrent falls. Thus the therapy was helpful in improving the quality of life in the patient both physically and mentally. This study was an indication of how beneficial Panchakarma therapy could be in such diseases, but the conclusions are yet to be drawn as to how much should be the duration of Panchakarma therapy and what are the final results in case of Becker's Muscular Dystrophy. It needs to be seen as to what could be the effects of continuous application of Panchakarma therapy in long term in such progressive diseases having a poor prognosis.

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