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# AYURVEDIC MANAGEMENT OF MUSCULAR DYSTROPHY *(MAMSAGATA VATA)*: A CASE STUDY

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## ABSTRACT

Muscular dystrophy is a collection of muscular ailments which considered by the degenerative weakness which affect loss in muscular mass. It affects large number of age group. There are dissimilar types of muscular dystrophy and most ordinary indication can be seen in boys in early days. In muscular dystrophy irregular genes hinder the structure of proteins which are essential in the configuration of muscles. In Ayurveda it can be classified under Adibala Pravrittavyadhi and the pathogenesis occurs due to the Beejbhaga Avyava dushti which leads to vataprakopa takes sthansamshraya in medomamsa dhatu and deplets them. This may lead to muscular wasting and dystrophies. a case of muscular dystrophy in a child about 18 years which can be diagnosed with mamsagata vaata leading to progressive mamsa shosha managed through Ayurvedic line management by Rajayapana Basti with follow up period of 1years of Matra Basti. With ayurvedic priciples, the progression of the disease can be postponed and improve the quality of life. The reduction in symptomatology was seen after three sittings of panchakarma procedures and internal medications at the interval of 60 days. The treatment showed significant reduction in the level of CPK and LDH.

**KEYWORDS:** Muscular dystrophy, Genetic disorder, Maamsagata Vata, creatinine phosphokinase, Rajayapana basti, Maatrabasti, Agni Chikithsa Lepa.

## INTRODUCTION

The word dystrophy is taken from greek (‘dys’ meaning abstract and ‘trophy’ means nourishment) says that loss of nourishment to the muscle fibers. In the year 1806-1875 one of the greatest scientist named named as French neurologist found this for the very first time. The illness described by Neapolitan physician Giovanni semmola and Gaetano conte in 1834.[1] Clinically based on predominant proximal muscle involvement, independent walking achieved at one point in a lifetime, muscle fibre loss, dystrophic changes in muscle histology, inheritance pattern. Muscular dystrophy is a group of muscular disorder that involves, the progressive loss of muscle mass due to improper muscle fibers production Muscular dystrophy is caused by genetic mutation that interferes with the production of muscle proteins which helps in growth and health of muscles. Muscle fails to regenerate resulting in progressive weakness which may also leads to death.[2]

These are a group of hereditary disorders characterized by progressive degeneration of selective group of muscles without involvement of nervous system. Diagnosed based on high creatine phosphokinase level indicates muscle degeneration.[3] It is the most specific objective parameter for the diagnosis and assesement of severity of muscular dystrophy.

A conservative estimation of overall prevalence of muscular dystrophy 1 in 3500 or 0.029%. more than 30 muscle disorders with similarities to muscular dystrophy have been identified. The disease shows slow progression in patients of young age but has no definitive cure or plan of management in any medical science as of now leading to neglect and reduced quality of life in these children affected by the disorder.

In ayurveda consider this condition as adibala pravrit (disease that occurs by defects in shukra and shonita) with mamsagata vata[4] (vata dosha vitiation in mamsa dhatu due to srotorodha). There is depletion of dhatwagni(metabolism) paving the way of ama formation followed by vitiation of kapha dosha. while srotorodha produces hypertrophy in perticular region, vata is manifested first as prakopa and then depletion of its qualities. the complex pathogenesis may be responsible for progressive wasting and necrosis of the affected muscle fibres.

## CASE HISTORY

A female patient of aged about 18 years presented with complaints of inability to get up from squatting position without support, weakness in both lower limbs noticed by parents since 13 years. The child was born through normal delivery, new-born baby cried soon after birth and

weighed 3 kgs. Her parents observed weight loss, usage of hands to stand up from squatting position and climb stairs with hands on the knees from that time the child is not able to achieve good grades. Repeated falling while running or walking, difficulty in lifting heavy weight associated with decrease muscle bulk around pelvic and thigh region and increase muscle bulk in calf muscles since 8years. The patient consulted Maharashtra solapur. On investigation cpk 1340 U/L. Mutation analysis showed no deletion or duplication in heterozygous or homozygous state in dmd gene. On clinical examination, she had bilateral calf muscle pseudohypertrophy with an absent knee jerk and proximal muscle weakness in lower limbs and Gowers's sign was positive. EMG suggested a myopathy pattern.

**Detailed history**

Patient was apparently healthy before 13 years. Patient had normal growth and development till 5 years of age. Milestones achieved at normal time. she noticed the feeling of tiredness after walking for a few of 50 mtr distance, later she noticed feeling of tiredness even without doing any work. In a span of 5 months her parents noticed that she was taking more time than usual to reach home from school. They also noted that there was a slight change in curvature of her spine, i.e, a mild backward bending. There were no episodes of fall or impairment of memory after 2 months, she found it difficult to get up from sitting position she was using arms to climb up the legs in attempting to get up from the floor. Along with that they noticed there was change in the GAIT i.e, she was walking on the toes on right side and on left she was placing the foot completely on the ground with less balance. associated with decreased muscle bulk around pelvic and thigh region and increased muscle bulk in calf muscles. They consulted physician at Solapur hospital for these complaints and diagnosed with MD on 2018. she was prescribed with medication along with physiotherapy for about 4 years. But improvement not seen as much. They were advised to go for ayurveda tratment. So approached to our hospital for further management on 2022. Negative history of breathlessness or difficulty in swallowing.

**Examination finding of first visit are given in Table 1**

**Table no. 1: General Examination.**

| | |
|---|---|
| Nadi | Vata-kaphaja |
| Mutra | Samyag, 5-6 times/day |
| Mala | Kathin, once in two days |
| Jhiva | Upleptwam |
| Shabdha | Prakruta |
| Sparsha | Ruksha |

| | |
|---|---|
| Druk | Prakruta |
| Aakruti | Vata-kapha |
| Prakruti | Avara |
| Sara, Satva, Saatmya, Samhanana, Pramana | Alpa |
| Aharashakti | Madhyam |

**Table no. 2: Systemic Examination.**

| | | |
|---|---|---|
| Built | Moderate | Pulse-72/min |
| Nourishment | Under | b.p-120/80mm of hg |
| Pallor | Absent | Temp-98.6 F |
| Icterus | Absent | Rs-18/min |
| Cynosis | Absent | Height-152cm |
| Clubbing | Absent | Weight-40kg |
| Lymphnodes | Not palpable | BMI-18.2 |
| Oedema | Absent | |

| | | |
|---|---|---|
| CNS | HMF Intact, Fully conscious, oriented to time, place, person, memory intact, intelligence good, speech disturbance absent Cranial nerve examination- NAD | |
| CVS | S1S2 Heard | |
| RS | NVBS Heard | |
| P/A | Soft and non tender no organomegaly | |
| MOTOR SYSTEM | | |
| 1)Involuntary movements | Absent | |
| 2)Muscle bulk | RT | |
| Biceps | 11inch | 11inch |
| Forearm | 8inch | 8inch |
| Mid thigh | 15inch | |
| Calf muscles | 10inch | 10inch |
| 3)Muscle tone | | |
| Right hand | Hypotonia | |
| Left Hand | Hypotonia | |
| Right leg | Hypotonia | |
| Left leg | Hypotonia | |
| 4)Muscle strength | | |
| Upper limb | RT | LT |
| Elbow Flexion | 5/5 | 5/5 |
| Elbow Extension | 4/5 | 5/5 |
| Wrist Flexion | 5/5 | 5/5 |
| Wrist Extension | 5/5 | 5/5 |
| Finger abduction | 4/5 | 5/5 |
| Opposition of thumb | 4/5 | 5/5 |
| Test of grip | 5/5 | 5/5 |
| Lower limb | | |
| Hip Adduction | 4/5 | 4/5 |
| Hip Abduction | 4/5 | 3/5 |
| Flexion | 4/5 | 3/5 |

| | | |
|---|---|---|
| Extension | 4/5 | 4/5 |
| Knee Flexion | 4/5 | 3/5 |
| Knee Extension | 4/5 | 3/5 |
| Ankle Dorsiflexion | 5/5 | 5/5 |
| Planterflexion | 5/5 | 5/5 |
| 5)Co-ordination | | |
| Sensory-Sterognosis | Present | Present |
| Point discrimination-Upper limb | Present | Present |
| Lower limb | Present | Present |
| Graphestesia | Present | Present |
| Motor UL-Finger nose test | Co-ordination present | |
| Finger nose finger | | |
| LL-Knee heel test | | |
| 6)Reflexes | | |
| Superficial-corneal | Present | |
| Abdominal | Absent | |
| Deep | RT | LT |
| Biceps jerk | Diminished | Diminished |
| Triceps jerk | Diminished | Diminished |
| Knee jerk | Diminished | Diminished |
| Ankle jerk | Diminished | Diminished |
| Clonus- patella | Diminished | Diminished |
| Ankle | Diminished | Diminished |
| Babinski reflex | Absent | Absent |
| Abdominal | Absent | |

## INVESTIGATION

On first visit on 21/2/2022 EMG showed myopathic changes- endomysial connective tissue proliferation - Scattered degenerating and regenerating myofibres - Foci of mononuclear inflammatory cell infiltrates. Laboratory tests showed CPK value as 1340 U/L, LDH value 618 U/L, MRI Brain showed small sized bulges of C3-4, C4-5, C5-6, D6-7,D7-8,L4-5,L5-S1 discs indeting thecal sac.

## DIAGNOSIS

This patient was already disgnosed with Muscular dystrophy (mamasagata vata/ mamsa shosha)

## CHIKITSA SUTRA

If vitiated vata is located in the mamsa and meda, then vireka (purgation) and Niruha Basti treatment and Shamana -vata alleviating medicines are administered.[5]

**TREATMENT PLAN**

After proper history and examination, Panchakarma procedures were planned each at an in interval of 60days. External Agnichikitsa alepa was performed followed by Dashmoola parisheka, followed by administration of Rajayapana basti. all these procedures performed for 10days. Panchakarma procedures advised are mentioned in Table 3.

**INTERVENTION PLANNED**

**Table no.3.**

<table>
<tr><td colspan="3">Treatment Plan</td></tr>
<tr><td>21-02-2022<br>to<br>30-03-2022<br>(For 10days)</td><td>Agnichikitsa Alepa<br>Dashmoola Parisheka<br>Rajayapna basti (kala)</td><td rowspan="4">Agnichikitsa Alepa-<br>External application for 5-10days for 4 hours daily.<br>And laghu ahara advised<br>(manda and yusha)<br><br>DASHMOOLA PARISHEKA<br>Duration-20-25mins<br>For (5-10days)<br>With Dashmoola Kashaya<br><br>RAJAYAPNA BASTI-<br>Quantity 120ml/day given after light food and Basti retention period between 5-10mins</td></tr>
<tr><td>23-05-2022<br>to<br>27-05-2022<br>(For 5days)</td><td>Alepa<br>Dashmoola Parisheka<br>Rajayapna basti (kala)</td></tr>
<tr><td>25-07-2022<br>to<br>1-08-2022<br>(For 8days)</td><td>Alepa<br>Dashmoola Parisheka<br>Rajayapna basti (kala)<br>Physiotherapy</td></tr>
<tr><td>10-10-2022<br>to<br>16-10-2022<br>(For 7days)</td><td>Alepa<br>Dashmoola Parisheka<br>Rajayapna basti (kala) Physiotherapy</td></tr>
</table>

**Table no.4.**

| **LOCOMOTORY EXAMINATION ON 21/2/2022** | |
|---|---|
| Inspection | Calf muscle Pseudohypertrophy +, Mild atrophy of pelvic and thigh muscles. Mild lumbar lordosis seen Waddling gait seen Toe walking seen |
| Palpation | Tenderness L3-4 No warmth |
| Range of movement | Forward bending-restricted Backward bending-not restricted Left lateral and right lateral- not restricted |
| TEST | |
| Tendelenburg test | Positive |
| SLR active and passive | Negative |
| left limb Schobers test | Negative |
| Femoral nerve stretch | Negative |
| Sign: Gowers sign positive | |

**AGNICHIKITSA ALEPA INGRIEDENTS**

**DASHAMOOLA**

| |
|---|
| 1. Lashuna (Allium sativum) |
| 2.Lavanga (Syzygium aromaticum) |
| 3.Maricha (Piper nigram) |
| 4.Sarshapa (Brassica campestris) |
| 5.Haridra (Curucuma longa) |
| Leaves of the following |
| 6.Kshudra agnimantha (Clerodendrum phlemoidis) |
| 7. Vanatulasi (Ocimum basilicum) |
| 8. Nirgundi (Vitex nigundo |
| 9.Papata (Pavetta indica |
| 10.Bandha (Bradelta scandes) |

**PARISHEKA INGRIENDS**

| |
|---|
| 1.Bilva |
| 2.Patala |
| 3.Agnimantha |
| 4.Shyonak |
| 5.Gambhari |
| 6.Bruhati |
| 7.Gokshura |
| 8.Kantakari |
| 9.Prishnaparni |
| 10.Shalparni |

**RAJAYAPANA BASTI INGRIEDENTS**

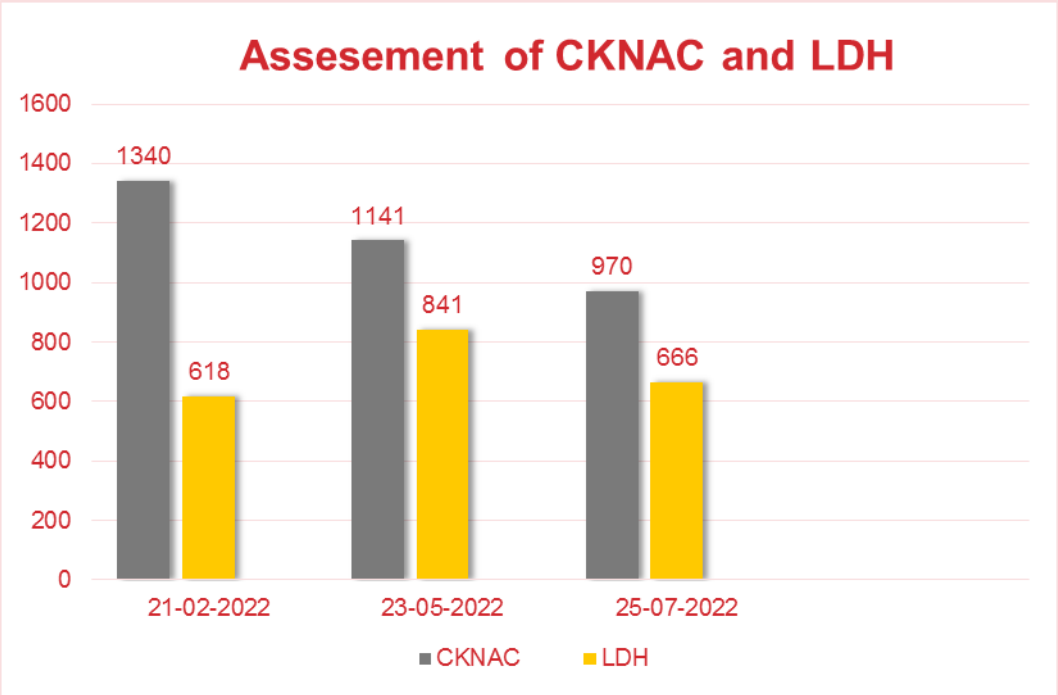
| | |
|---|---|
| 1.Musta | |
| 2.Ushira | |
| 3.Bala | |
| 4.Aragvada | |
| 5.Rasna | |
| 6.Manjishta | |
| 7.Trayamana | |
| 8.Punarnava | |
| 9.Paata | |
| 10.Vibhithaki | |
| 11.Guduchi | |
| 12.Shalaparni | |
| 13.Brahati | |
| 14.Thiktha | |
| 15.Kantakari | |
| 16.Prishniparni | |
| 17.Gokshua | |
| 18.Shatpushpa<br>19.Madhuka<br>20.Kutajaphala | KALKA DRAVYA |

| | |
|---|---|
| 21.Daruharidra<br>22.Priyangu | |
| 23.Madhu | |
| 24.Moorchitha Tila Taila | |
| 25.Mamsa Rasa | |
| 26.Saindhava. | |

**SHAMANA CHIKITSA**

| S.N. | Name of drug | Dose & frequency | Anupana | Duration |
|---|---|---|---|---|
| 1. | Bala Taila Matra Basti | 30ml/day | - | 60days |
| 2. | Kooshamanda Rasayana | 25gm-0-0 | Milk | 60days |
| 3. | Nurod | 1-0-1 | water | 60days |
| 4. | Guggulu tikta Kashaya | 3TSF TID | - | 60days |

**RESULT**




**OBSERVATIONS**

| Before Treatment | AFTER TREATMENT |
|---|---|
| 1)Weakness in both lower limbs<br>2)difficulty while walking, climbing stairs and running<br>3)unable to getting up from sitting position,<br>4)decreased muscle bulk around pelvic and thigh region<br>5)increased muscle bulk in calf muscles | 1)Patient was able to stand for longer duration than earlier.<br>2)Frequency of fall reduced.<br>3)Able to walk without support for longer distance.<br>4)climbing stairs and walking possible easily. |

## DISCUSSION

Muscular dystrophies according to ayurveda has many correlations and this patient with mamsagatavata where symptoms like tiredness and pain in little walk (saruk shramitamatyartham) and khalli[6] (pain in the calf region). Muscular dystrophies are genetic disorders and this patient also shows past history of it, we can consider it as Adibala-pravrita Vyadhi (disease that occurs by defects in shukra i.e, spermatozoa and shonita i.e, ova) viz, sushruta's vyadhi vargikarana[7] (i.e, classification of diseases). Here pathogenesis occurs due to beejbhagavayavaadusti (i.e, sex- linked disease). As vata dosha is the primal constituent of the living body and is responsible for functions of central, autonomic and peripheral nervous system.[8] Here due to vata which further leads to its vitiation and Sthanasamshraya (occupying) in Mamsa and Medo dhatu and vitiates and depletes these Dhatus.[9] simultaneously there will be formation of Ama(toxins) which leads to srotorodha (obstruction) and vata dosha vitiation. There will be hypertrophy in particular region and wasting in other region due to vata dosha vitiation. In that case there is no satisfactory treatment in any system of medicine because of progressive degeneration nature of disease. In ayurveda, treatment like Agnichikitsa lepa was advised when there is association of samadoshavastha. Dashmoola parisheka[10] indicated in vata disorders having an association of morbid kapha or ama. Acharya charaka has mentioned basti as ardha chikitsa (half treatment) and best treatment for vitiated vata.[11] Yapana basti acts as lekhana and Brumhana. It is medohara and increases agni.[12] The Herbo-mineral drugs works on Dhatvagni hence giving nutrition to subsequent Dhatus. We have noticed muscle bulk increase in pelvic region and decrease hypertrophy in calf region. Rajayapana basti course in kaala pattern which includes Rajyapana Basti alternating with matra basti. The internal medications with these treatments included Kooshmanda Rasayana, A Rasayana Yoga which has targeted action on maamsa dhatu.

## CONCLUSION

In the condition like myopathies where progression of disease is very fast and fatal and no cure is available in modern medicine the ayurvedic Treatment modalities help in giving patient the quality of life. It did not claim for the genetic effect of restoring dystrophin production, but help in reducing serum CK levels and it can be proved worldwide by research. This management of Muscular dystrophy for a period of 1 years by careful observation and monitoring of signs and symptoms along with blood parameters is described. In the time when the sole treatment thought of for the disease exercise therapy to have

backfired and gene therapy was not conclusive and heavy on the pocket the treatment management through *Ayurvedic* principles give clarity and confidence in managing and providing a better quality of life to the child and parents inclusively.

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