



## Review Article

### MANAGEMENT OF ASTHI-MAJJA GATA VATA WSR INTER VERTIBRAL DISC PROLAPSE (IVDP) WITH SAGRITHA KSHEERA BASTI - A CONCEPTUAL STUDY

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#### ABSTRACT

Lumbago is the third most common symptom presented to general practitioners. Worldwide, 37% of low back pain was deemed attributable to occupational risk factor. *Dhatu*s like *Asthi* and *Majja* in *Prakrutha avastha* does *Dharana* and *Poorana* to body and in *Vikrutha avastha* produce leads to *Asthi shoola*, *Asthi kshaya*, *Asthi shoonyata* etc.

*Gatatva* (movement/passage) is a phenomenon which is used for explaining about the *Samprapthi* that results in *Dhatu kshaya* (diminished). The *Lakshana* of *Asthi Majja gata vata* is *Bhedo asthi parvani* (cracking of bones and joints) *Sandhi shoola* (piercing pain in the joints), *Mamsa bala kshaya* (diminution of muscle tissues), *Aswapna (insomnia)* *Santata ruja (constant pain)*. The disease that which comes under these are *Kati graha* (low back stiffness), *Gridhrasi* (sciatica), etc.

Inter vertebral prolapsed disc IVPD is a pathology condition which has symptom of lumbago, caused due to strenuous activities, it has 4 stages and once pathology crosses 2<sup>nd</sup> stage condition cannot be reversed. It starts from severe low back pain, which may be localized then radiates and progresses towards producing towards symptoms like numbness, reduced strength etc.

Acharaya *charaka* while explaining about treatment for *Asthimajja gata vata*, emphasizes to consider both *Asthi* and *Majja* for treating through *Snehan* in both *Bahya* (externally) and *Abhyantara* (internally). While explaining about *Asthi pradoshaja vikaara* he explains to adopt treatment of *Panchakarma* in which he gives Importance to *Basti*, containing *Ghritha* and *Ksheera* as main *Dravya*.

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#### INTRODUCTION

Back pain is the third most common symptom presented to general practitioners after headache and fatigue Low back pain or lumbago is an extremely common phenomenon; a price mankind has to pay for their upright posture. Worldwide, 37% of low back pain was deemed attributable to occupational risk factors<sup>1</sup>.

While most patients with back pain seen in primary care will have 'simple mechanical Back pain', there is a long list of potential diagnoses, some of them serious and life threatening. The concept of diagnostic triage has been developed to facilitate the efficient and effective diagnosis and management of patients presenting with back pain in primary and secondary care<sup>2</sup>.

#### Dhatu Karma

- *Asthi dhatu* – support to maintain posture. The *Peshi*, *Sira*, *Snayu* all take their support from *Asthi* thus making the structure firm and strong<sup>3</sup>. *Asthi* when gets *Prakopa* (aggravated) produce *Vikaara* (diseases)

like *Adhyasthi dhanta* (extra growth of tooth), *Shoola* (pain), *Vivarnata* (discolouration),<sup>4</sup> etc.

- *Majja dhatu* – it helps in providing *Snehana*, *Bala*, *Asthi poorana* (fills up cavity) and does *Shukra poshana* (nourishes semen)<sup>5</sup> due to the *Prakopana* produces symptoms like *Ruk*, *Brahma*, *Moorcha*, *Tamaha*, *Arumshi*<sup>6</sup>, etc.

*Dhatu*s have two forms i.e. *Asthayi dhatu*(non-stable) and *Sthayi dhatu*s (stable). In *Dhatugatatva*, the *Sthayi dhatu*s are weakened and aggravated *Vata* gets lodged there in. Due to the same fact, line of treatment also should be to improve the quality of *Dhatu*s (tissues) and to pacify the *Vata*.

According to the complexity of the pathogenesis, *Dhatu gatatva* may produce symptomatology suggesting a single disease, a group of disease or even diseases which are opposite in nature. However it may be, the clinical presentation may be generally having the nature of *Dhatu*s *dourbalya*.

**Concept of Gatatva**

Acharya Vagbhata explains about *Gatatva* of *Doshas* as, the vitiated *Doshas* cause vitiation of *rasa* and other *Dhatu*s and also vitiates *Malas* which in turn vitiates *Srothas* from the vitiated *Srothas* manifest the diseases<sup>7</sup>.

Analyzing the above referred meanings and synonyms it can be concluded that the word *Gata* has two implications. One related with the movement and the other related with occupying. Hence '*Gatatva*' of *Vata* implies an undesirable movement of *Vata* and it's unnecessary occupation of certain sites.

- *Asthi dhatu* and *Vata dosha* have *Ashra ashrayee Sambandha* (inter relationship) because of this *Vata vrudhi* (aggravation) takes place in *Asthi dhatu* and, *Majja dhatu* has *Ashraya Ashrayee bhava Sambandha* with *Kapha dhatu*<sup>8</sup>.

The *Vyadhi* that come under *Lakshana* of *Kati vedana* are *Gridhrasi*, *Kati shoola*, *Kati graha*, *Sandhi gata vata*, *Snayu gata vata*, *Guda agata vata*, *Sannipataja jwara* etc.

**Low Back Pain**

The spine is a weight bearing structure. Movements take place at apophyseal joints, which are synovial and at the inter vertebral discs. These are closely related and disease or deformity at one will often affect other. In the lumbar spine strength is provided at the expense of mobility, the total flexion extension being 45° with very little rotation depending upon the history, appearance of the patients etc the causes of lumbago can be classified as.<sup>9</sup>

| S.No | Causes                     | Example  |
|------|----------------------------|--|
| 1    | Congenital                 | Spondylosis, spondylolisthesis etc.                        |
| 2    | Traumatic                  | Prolapsed disc, sprain, strain etc.                        |
| 3    | Inflammatory               | Ankylosing spondylitis etc.                                |
| 4    | Degenerative               | Osteo arthritis etc.                                       |
| 5    | Neoplastic                 | Benign – osteoid osteoma etc.<br>Malignant – lymphoma etc. |
| 6    | Metabolic                  | Osteoporosis etc   |
| 7    | Pain referred from viscera | Genito – urinary disease etc.                              |
| 8    | Miscellaneous              | Functional back pain etc.                                  |

The methods of ascertaining the history of patient also play an important role<sup>10</sup>.

History - Age – more seen in 21-45yrs

- Sex

- Past history

Features of pain – location, onset, localization of pain, progress of the pain, relieving and aggravating factors

Associated symptoms – stiffness, pain in other joints, neurological symptoms extra- Skeletal symptoms, physiological status of the patient

Physical examination – Standing – position, spasm, tenderness, swelling, ROM

Lying- SLR-positive @40° or < suggest root compression

Neurological – sensation, muscle power etc

Peripheral pulses

Adjacent pulses

Abdominal examination

Investigations – x-ray – in acute pain < 3 weeks.

MRI, CT-SCAN

CBC - In suspicion of metabolic disorders etc

**Prolapsed Intervertebral Disc**

Anatomy of Intervertebral Disc -3 distinct components<sup>11</sup>

- **Cartilage end plates:** The cartilage plates are thin layers of hyaline cartilage between adjacent vertebral bodies and the disc proper. the disc receives its nutrition from the vertebral bodies via these end plates, by diffusion.
- **Nucleus pulposus:** Is a gelatinous material which lies a little posterior to the central axis of the vertebra. It is usually under considerable pressure and is restrained by the crucible like annulus.
- **Annulus fibrosus:** it encloses nucleus fibrosus, it is a structure composed of concentric rings of fibro cartilaginous tissue.

**Pathology of Inter Vertebral Prolapsed Disc (IVDP)<sup>12</sup>**

| Stage   | Changes in Pulposus  | Changes in Annulus  |
|---|--|---|
| 1- Nucleus Degeneration (degeneration stage)    | Softening of nucleus and its fragmentation.  | Weakening and disintegration of the posterior part of annulus |
| 2- Nucleus Displacement (disc protrusion stage) | The nucleus tends to bulge through the defect (disc protrusion)  | Degeneration and fragmentation is increased due to injury     |
| 3- Stage of extrusion (disc extrusion stage)    | Nucleus comes out of annulus and lies under the posterior longitudinal ligament contact  |   |
| 4- Stage of sequestered                         | The extruded disc may lose its contact with the parent disc. The sequestered disc may come lie behind the posterior longitudinal ligament. |   |

**CAUSES<sup>13</sup>**

- Common cause due to sedentary life.
- Preceding history of trauma
- Exertion such as having lifted something heavy or pushed something immediately preceding a sudden onset backache.

**COMMON SYMPTOMS<sup>14</sup>**

Common presenting symptom is low back pain with or without radiating the back of leg i.e., course of sciatica.

- Low back ache – on set acute or chronic

- Acute backache is severe with the spine held by muscle spasm and any movement of spine painful with difficulty to get up from sitting posture.

- In chronic condition the pain is dull and diffuse, increases in forward bending or standing for long time. relieved by rest.
- Sciatica – pain radiating from low back until the course of sciatic nerve

| Nerve Root Compression | Pattern of Radiation                    |
|------------------------|---|
| S1                     | To the posterio lateral calf and heel   |
| L5                     | Anterio lateral aspect of calf and heel |
| Higher to L2-L3        | To the front of the thigh               |

➤ **NEUROLOGIC DEFICIT IN DISC PROLAPSED<sup>15</sup>**

| Level  | Nerve root Affected | Motor weakness  | SENSORY LOSS  | REFLEXES                        |
|--------|---------------------|---|---|---------------------------------|
| L5-S1  | S1 root             | Weakness of the plantar flexors of the foot                         | Over the lateral side of the foot                   | Ankle reflex sluggish or absent |
| L4- L5 | L5 root             | Weakness of extensor hallucis longus and dorsal flexors of the root | Over dorsum of the foot and lateral side of the leg | Ankle jerk normal               |
| L3-L4  | L4 root             | Weakness of extensors of the knee                                   | Over great toe and medial side of the leg           | Knee jerk sluggish or absent    |

**INCLUSION CRITERIA**

- Disc protrusion @ L3-L5
- Degenerative stage @L3-L5

*Antha* (internal administrations) and *Bahya* (external therapies).

**EXCLUSION CRITERIA**

- TB spine
- Extrusion stage
- Sequestrated stage
- Spina bifida
- Trauma

*Antah* (internal medications) - *Choorna* – *Aswagandha choorna*. *Guggulu* – *Mahayoga raja guggula*.

*Vati* - *Chitrakadi vati Taila* – *Gandharva hastyadi taila*.

*Kalka* - *Laushuna kalka Kashaya* - *Masha eranadadi kashya*.

*Rasayana* - *Yoga raja guggulu*, *Bruhat vata chintamani*, *Rasa rajeshwara rasa*.

*Ghritha* – *Indukantha ghritha*.

*Bahir* (external therapies)- *Sthanika* - *Lepa* - *Manjishtadi lepa Snehana* - *Kati basti*, *Kati pichu* with *Tailas*, *Mamsa rasa*.

*Sarvanga* - *Snehana* (oleation) - *Dhanvantaram taila*, *Narayana taila*.

*Rookshana* (drying) - with *Choorna* like *Kottam chukkadi*, *Jadamayadi choorna*.

*Swedana*(sudation) - *Patra potali sweda* using *Patra* like *Nirgundi*, *Eranda* etc.

*Basti* (enema) - *Eranda moolad*, *Dashamooladi shodhana basti*, *Mustadi yapana basti*.

**Available Treatment for Low Back Pain<sup>16</sup>**

- For chronic - Spinal manipulation, Acupuncture, Biofeedback Cognitive-Behavioral therapy. Massage, Comprehensive rehabilitation programs
- Acute - heat or ice pack, taking medicine, resting, Manual therapy or stronger pain medicine, a muscle relaxant, Epidural steroid shots.

**Available Treatments in Ayurveda<sup>17</sup>**

- The aim the *Chikitsa* (treatment) is to attain *Dhatu samyata* (maintain equilibrium among tissues).
- There are variety of treatment modalities available in Ayurveda, broadly it can be classified in to

In emergency *Raktha mokshana* (bloodletting), *Rooksha agni karma* can also be done.

- *Acharya charaka* tells that *Basti* (enema) as the *Ardha chikitsa* among all *Chikitsa*.<sup>18</sup>
- *Acharya Vagbhata* while explaining about *Basti karma* indicates *Basti* in *Vatolbana*, and *Vata pradhana vyadhis*.<sup>19</sup>
- Among the types of *Basti* i.e. depending on the karma(effect) of *Basti*, *Ksheera basti* does both the action of *Shodhana* (elimination) and as well as *Brihmana* (nourishing) and when we analyze about the *Yoga* i.e., *Basti* when prepared by using ingredient *Tiktha ksheera*.

*Makshika* (honey)- does *Kapha hara*, it is a best *Anupana* in *Kapha vata*. It also has *Yogavahi guna*.

*Lavana* (rock salt)- it is *Shroto shodaka* (clears channel), when mixed with *Makshika* it helps to reach in micro Channels.

*Sneha* - due to its *Snigdhatta* it reduce *Rookshata*. *Snehana* used in form of *Ghritha* it does help in smoothness to *Aashaya* (organs) and help in movement of mala(waste products).

*Kalka, Kwatha* (decoction)- does *Utkleshana*, *Dosha harana* or *Shamana* of *Dosha*. *Tiktha rasa* does *Vata shamana*.

*Avapa* (adjuvant) - when used *Ksheera* does *Brihmana* (nourishing) effect.

- While explaining about *Basti karma* *Acharyas* explain that neither *Sneha basti* nor *Nirooha basti* should be continuously given, if done it leads to *Vata prakopa* (aggravate) so *Basti* like *karma Basti*, *Kala basti*, *Yoga basti*.

Depending on the purpose or by adding *Avapa dravya* it can be either *Shodhana*, *Brihmana*, *Sthambana*, *Lekhana basti*

- While *Acharya sushruta* has stated the 8<sup>th</sup> *Sneha basti* reaches *Asthi-majja dhatu*, for these purpose the *Yoga*, *Kala* and *Karma Basti* has come.
- *Shodananga Snehana* when done in *Bahya* does help to move *Dosha* from *Shaka* to *Koshata* and also help in *Vata shamana*.

## RESEARCH UPDATES

40 Patients diagnosed Osteoporotic by Bone Mineral Density test, were randomly divided into two groups, A and B consisting of 20 patients each. Patients of Group-A were administered *Tikta Ksheera Basti* in *Kala Basti* schedule (16 days) followed by *Ajasthi Bhasma* - 500 mg orally B.D. with milk as *Anupana* for 3 months. Patients of Group-B were given only *Ajasthi Bhasma* - 500 mg orally B.D. with milk as *Anupana* for 3 months. The combined therapy of *Basti* and *Ajasthi Bhasma* showed encouraging results in the subjective and objective parameters of Osteoporosis. The study shows that the *Tikta Ksheera Basti* and *Ajasthi Bhasma* are very effective in the management of Osteoporosis.<sup>20</sup>

30 patients of *Asthikshaya* with low Bone Mineral Density score were given 180 ml *Panchatikta Ksheer Basti* daily for 30 days, follow up taken for 2 more months to study the effect of treatment on subjective and objective parameters. Observations & Results: Treatment showed significant relief in subjective parameters like *Asthishool*, *Katishool*, *Sandhishool* and also improvement in BMD T-Score. Conclusion: The study shows that the *Pancha Tikta Ksheera Basti* is effective in the management of *Asthikshaya* w.s.r. to Osteoporosis & Osteopenia.<sup>21</sup>

A clinical trial was done in 40 patients in sciatica which also come under IVDP, with similar inclusion & exclusion criteria had found better symptomatic result with these treatment because of following reason. *Ghritha* contains *Tikta Rasa* which increases the *Dhatvagni* (metabolic stage). As *Dhatvagni* increases, nutrition of all the *Dhatu* is increased. As a result *Asthi Dhatu*, *Majja Dhatu* may get stable and *Asthi Dhatu* and *Majja Dhatu Kshaya* will be decreased. So degeneration in the *Asthi Dhatu* may not occur rapidly.

It can be said, it slows down the degeneration processes. *Asthi Majja gata Vata* is *Madhyama Roga Marga gata Vatika* disorders in which vitiated *Vata* gets lodged in *Sandhi*.

Hence to treat *Asthi Majja gata Vata* drugs acting on both *Vata* and *Asthi* should be selected *Tikta Rasa* has got *Deepana*, *Pachana* and *Rochana* properties. So it helps in the improvement of the general condition of health and thus strengthens the whole body as well as joints. *Tikta Rasa* possesses *Lekhana* property, so it helps in the weight reduction of the patients.

*Tikta Rasa* is also have *Jwaraghna* and *Daha Prashamana* properties that it may acts as anti-inflammatory agent and can reduce the pain and swelling of the joints. *Tikta Rasa* has *Vayu* and *Akasha Mahabhuta* in dominance. Hence it has affinity towards the body elements like *Asthi* having *Vayu* and *Akasha Mahabhuta* in dominance.<sup>22</sup>

## Mode of action of *Saghritha ksheera basti*<sup>23</sup>

- While analyzing about Physical state Liquids are absorbed better than solids.
- Ingredients of *Basti*, their solubility and their homogenous mixing: Lipids and lipid soluble drugs penetrate into the cell more rapidly than the water soluble drugs. The homogenous mixture of *Basti dravya* is important.
- The cow's milk which is the main ingredient of the *Ksheera Basti* is rich in calcium, phosphorus, magnesium, potassium, sodium, chlorine etc. It also contains fat soluble vitamins like vitamin-A, D and K. Apart from this the ghee contains phospholipids which play an important role in the mineralization of bones.
- Hence all these factors enhance the absorption of the *Basti dravya* from the rectum through the rectal mucosa.



- The *Basti dravya* absorbed from the lower part of the rectum enters the systemic circulation via middle and inferior haemorrhoidal veins and the *Dravya* absorbed from the upper part of the rectum is thrown into the portal circulation through the superior haemorrhoidal veins.

#### CONCLUSION

- *Basti* due to its *Veerya* does *Vata hara* as well as *Shroto shodaka* (cleanses channels) and *Brihmana* due to its combination.
- This can be used as a preventive as well as curative treatment after addressing the *Bala* of the *Roga* and *Rogi, Kala, Desha* etc factors.
- When the combination of *Saghritha ksheera* is used in the 1<sup>st</sup> 2 stage of IVDP it would help in delaying the progression of the disease.
- The surface area of the small intestine and rectum is more and it has very rich blood supply, moreover the *Basti* when given in the morning after the patient has passed the stool i.e. when the rectum was empty.

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