

A CLINICAL STUDY ON THE EFFECT OF KAPARDAKA BHASMA W.S.R TO ASTHIVAHA SROTA

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ABSTRACT

Out of seven *dhatu*s in body, *asthi* is important as it holds the body in specific. In the present era, the prevalence of the diseases related to *asthi*, *sandhi* is very common, resulting in the crippling state of the patients. The disease related to bone and joints are concomitant in nature. The pain and immobility is the intense characteristic of the bone related diseases. *Asthikhsaya*, *asthyavrita vata*, *asthigata-vata*, *sandhivata* are the specific diseases of *asthivaha srotodusti* and very much classified in bone disease. To combat the feature of *asthivaha srotodusti kapardaka bhasma* is therapeutically evaluated. All the results were analyzed statistically before and after treatment.

Keywords: *Asthivaha srota, kapardaka bhasma*

INTRODUCTION

Dosa, *dhatu* and *mala* are the main factors for the formation and regulation of the body¹. *Dosa* plays an important role to affect the *dhatu*s resulting in several diseases in accordance with the affliction of respective *dhatu*s⁽²⁾. Out of seven *dhatu*s, *asthi* is important as it holds the body in specific⁽³⁾. The *mula* of *asthivaha srota* is *meda* and *jaghan* & *asthi* is formed by the absolute function of *asthyagni*⁽⁴⁾. Altered function of *asthi* is

caused due to the alteration of host (*ashti dhatu*) and guest (*marut* and *vyom*) relationship. *Marut* and *vyom* are the *ashrayi* of *asthi*. The intrinsic causative factor for the production of any disease is either *dhatu kshaya* or *avarana*⁽⁵⁾. In the present era, the prevalence of the diseases related to *asthi* and *sandhi* is very common resulting in the crippling state of the patients⁽⁶⁾. Aggravation of *ruksha guna* of *vayu* causes degeneration in *asthivaha srota*

and *asthi* in specific. The pain is intense characteristic of the bone related diseases and subsequently there will be the immobility. The diseases related to bones and joints are concomitant in nature. *Asthikhsaya*, *asthyavrita vata*, *asthigata vata*, *sandhi vata* are the specific diseases of *asthivaha srotodusti*⁽⁷⁾ and very much classified in disease state. The characteristics of *asthivaha srotadusti* are reflected in relation to the characteristics of those diseases. *Asthivaha srota* get vitiated due to intake of *vataja ahar vihar*, *utpeshan*, *abhishyandi bhojan*, *abhighata* and *prapidan*⁽⁸⁾. The *dhatu kshaya* in respect to *asthikhsaya* is manifested by *kesha loma nakha smasru prapatan* and *sandhi shaithilya*⁽⁹⁾ and subsequently produced the disease like *adhyasthi*, *adhidanta*, *danta bheda*, *asthi shula*, *vivarnata*⁽¹⁰⁾ etc. *Asthivaha srotodusti* is caused due to either *avarana* or *dhatukhsaya*. *Asthigata vata* is manifested by *asthi parva bheda*, *sandhi shula*, *mansa bala khsaya*, *aswapna*, *satata ruka* etc. and likewise *asthyavrita vata* is manifested by *sparsham asthyanam avrite tu ushnam pidanam cha abhinandite sanbhajate shidati suchi bhiriba tudyate*⁽¹²⁾. It is also profoundly noted that, *asthi majjavrita vata* and *asthi majjagata vata* are characterized by identical features. Therefore, in *asthikhsaya*, *sandhi* gets effected, characterized by *sandhi shula* which is also a supportive feature of *sandhivata*⁽¹³⁾.

AIMS AND OBJECTIVES

1. To evaluate the concept of *Asthi* and *Asthivaha srota*.
2. To evaluate the role of *Vayu* in the pathogenesis of *Asthivaha srota dusti*.

3. To evaluate the diagnostic measures in *Asthivaha srota dusti*.
4. To evaluate the efficacy of *kapardaka bhasma* clinically on *Asthivaha srotodusti*.

MATERIALS AND METHODS

SELECTION OF THE PATIENTS:

Fifty patients having the *asthivaha srotodusti lakshan*, at the age group of 16 - 70 years were selected from OPD and IPD of IPGAE&R at SVSP hospital irrespective of their sex, occupation and religion, following the exclusion and inclusion criteria.

EXCLUSION CRITERIA:

1. Patients below the age of 16 years and above 70 years of age.
2. Patients suffering from any other systemic diseases like hepatic failure, renal failure, cardiac disorder, diabetes mellitus and malignancy and thyroid disease.
3. Patients with certain symptoms not satisfying the subjective criteria of *asthivaha srotodusti*.
4. Patients presenting the *asadhya lakshna*.
5. Patients receiving any other supplementary therapy.
6. Patient of *majjakhsaya*, *mamsa medogata vata*, *mamsavrita vata*, carcinometosis and fracture.

INCLUSION CRITERIA:

1. Patient above 16 years of age and below 70 years of age.
2. Patients willing to include themselves in the study.

3. Patients having the signs and symptom of *asthivaha srotodusti*.
4. Primarily detected *asthivaha srotodusti* not taking any medicines,
5. Patients satisfying the maximum subjective criteria for *asthikshaya*.

SUBJECTIVE PARAMETERS FOR ASTHIVAHA SROTODUSTI:

Kesha, loma, nakha, samshru prapatan, srama, sandhi shaithlya, rukshata, parusya asthi toda, samsparsham ushnam peedunam cha ubhinandati, sanbhajyatesedati suchithiriva tudyate, asthibheda, parvabheda, sandhishula, mansa bala khsaya, aswapna, satata ruka, vatapurna driti sparsha, sandhi sotha, prasaran kunchanaya pravritti save-dana

OBJECTIVE PARAMETERS FOR ASTHIVAHA SROTODUSTI:

1. X-Ray of specific Bones and Joints
2. B.M.D (Bone Mineral Density)

3. Blood for TLC, DLC, ESR, Hb%, Blood Sugar (F&PP)
4. T3, T4, TSH
5. Serum Calcium, Serum Phosphate, Serum Alkaline Phosphates
6. Serum oestrogen, progesterone.

TRIAL DRUG:

Kapardaka bhasma was administered in the dose of 500 mg twice daily with honey after principle meal for the period of 3 months.

TRIAL PERIOD: Three month for each patient.

FOLLOW UP: All the patients were reviewed after fifteen days for a period of 90 days.

STUDY SAMPLE: Fifty patients of *asthivaha srotodusti* have been included in the study.

DROPPED OUT: Among fifty patients, ten patients were dropped during study course, hence complete clinical survey of forty patients was carried out.

STATISTICAL ANALYSIS OF DIFFERENT OBJECTIVE PARAMETER:

Table 1: Haematological Tests

Name of the tests	No. of the patients	Mean score		% of relief	S.D.	S.E.M.	‘t’	‘P’
		BT	AT					
1. Hb%	30	11.65	12.08	3.71%	0.507	0.092	5.03	<0.001
2. ESR	30	63.43	63.83	0.63%	3.804	0.694	4.22	<0.001
3. TLC	30	6051.66	6055.5	0.06%	5.276	0.963	3.63	<0.01
4. Neutrophils	30	3571.82	3591.63	0.55%	5.296	0.966	3.24	<0.01
5. Lymphocytes	30	2600.66	2604.66	0.15%	6.073	1.108	3.60	<0.01
6. Monocytes	30	255.13	255.66	0.21%	0.819	0.149	3.56	<0.01
7. Eosinophils	30	59.56	60.26	1.18%	1.149	0.209	3.33	<0.01
8. Basophils	30	49.13	50.13	2.04%	2.482	0.452	2.20	<0.05

Table 2: Biochemical Tests

Name of the tests	No. of the patients	Mean score		% of relief	S.D.	S.E.M.	't'	'P'
		BT	AT					
Blood Sugar (Fasting)	30	102.83	99.3	3.43%	3.753	0.685	4.67	<0.001
Blood Sugar (PP)	30	138.26	136.0	1.61%	2.344	0.427	5.22	<0.001
Serum Calcium	30	3.98	4.06	2.16%	0.104	0.019	2.62	<0.02
Serum Alkaline Phosphates	30	72.55	74.93	3.12%	4.370	0.797	2.83	<0.01
Serum Progesterone	30	7.01	7.19	2.57%	0.355	0.064	2.98	<0.01
Serum Estrogen	30	156.9	157.6	0.47%	1.111	0.202	3.61	<0.01
Serum T ₃	30	86.06	86.76	0.81%	1.055	0.192	3.63	<0.01
Serum T ₄	30	6.29	6.44	2.38%	0.303	0.055	2.82	<0.01
Serum TSH	30	1.86	1.91	2.70%	0.077	0.014	3.54	<0.01

'P' value = level of significance, **SE** = standard Error, **SD** = standard deviation, **BT** = before treatment. **AT**= after treatment. **'t' value** = paired 't' test,

IMAGING TEST

Selected patients were advised for x-ray of the effected joints before and after administration of *kapardaka bhasma*. It was observed from

the x-ray plate that maximum patients had osteoporotic change and minimum number of patients had normal study. After therapy there was no significant changes found in x-ray.

INSTRUMENTAL TEST

Bone mineral density (B.M.D) has been observed in 30 patients. Result of data before and after treatment given bellow.

Name of the Test	No. of patients	Mean B.T	Mean AT	% of relief	S.D	S.E.M	't'	'p'
B.M.D	30	-2.07	-2.09	0.96%	0.025	0.004	1.45	>0.10

DISCUSSION

Samprapti plays a major role in understanding the complete pathogenesis of a disease and is an indispensable factor from the *chikitsa* point of view. The series of changes taking place within the body right from the *nidana sevana* until the complete manifestation of disease is entailed by *Samprapti*. Ayurvedic classics has not mentioned about the *samprapti* of *asthivaha srota*. But, Acharayas have mentioned about the *Ashrayaashrayi Bhava* which beautifully explains the relationship of various *doshas* with the *dhatu*. In order to have a proper interpretation of the *samprapti* of *ast-*

hivaha srotodusti, apart from the normal *vata prakopa nidana*, the main factors for the materialization of the disease, *srotopradusaka nidanas* of *asthivaha*, *majjavaha* and *purisavaha srotas* should not be neglected, as they also play a definite role, either directly or indirectly in the pathogenesis of *asthivaha srotodusti*. The proper functioning of *Jatharagni*, *Bhutagni*, *Dhatwagni* is essential for the disease.

"*Samyak dhatu posana prakriya*" in order to maintain the qualitative and quantitative normalcy of the *dhatu*s while explaining concept of *dhatu utpatti*. Functional deformity in any

of these *agnis* especially the *dhatwagnis* leads to the *vikrti* in the transformation of *poshaka dhatu* (dhatu specific nutrients) into *poshya* or *sthayi dhatu*, resulting in *dhatu vikrti*. Hence, adaptation of the principles of *dhatu poshana krama* is also carried out in this regard to explain the *samprapti* of *asthivaha srotodusti*.

Manasika factors also play a vital role in the pathogenesis of *asthivaha srotodusti*. Thus these factors are also considered to frame up and explain the *samprapti* of *asthivaha srotodusti* effectively. Considering the above said factors it is learnt that the Pathogenic mechanism of *asthivaha srotodusti* is not single mechanism whereas it is a complex mechanism. These mechanisms may be classified as *samana* and *vishesha samprapti*.

Dhatu kshaya and *margavarana* are the causative factors for *Vata prakopa*. Owing to the *asrayasrayi bhava* between *asthi* and *vata dosha* the *prakopa* of the *vata dosha* is said to be the causative factor for the *asthivaha srotodusti*. Over indulging *nidana* lead to the *rikta* of the *srotas* due to *dhatu kshaya*. This leads to *vata prakopa* and *prakupita vata* fills in the *rikta dhatuvaha srotas* and vitiate them further leading to the stronger provocation of its own. This means that the empty *srotas* which are devoid of *snehadi gunas* gets filled by the *prakupita vata* and produces either *sarvanga* or *ekanga rogas*. As a result of this, the *ahara rasa* containing the *poshak rasa* to the *dhatu* will not be able to reach and nourish the *sthayi dhatu* i.e. specific arrangement and permeation of the *poshak rasa* inside the *sthayi dhatu* will not be possible and the functions of the *dhatwagnis* are also affected. As a combined effect of these factors *dhatu*

kshaya occurs. When this altered process occurs in *asthi* and *majja vaha srota* that leads to *asthivaha srotodusti*. The altered function of *medagni*, *asthagni* and *majjagni* diminished the process of formation of *poshya* and *poshak rasa* of *asthi* and *majja dhatu*.

"Parasparopa samsthabdha dhatu sneha parampara". *Asthi* and *majja dhatu* also perform this function of *paraspara poshana*. The *srota pradushaka nidanas* of *asthivaha* and *majjavaha srotas* are also responsible for *asthi kshaya*. The *aharaja nidanas* such as *abhisyandi* and *viruddha ahara* of *majjavaha srotodusti* causes *margavaranajanya vata prakopa* and the *vatala ahara vihara sevana* explained under *asthivaha srotodusti hetu* directly leads to *vata prakopa*, resulting in *asthi kshaya*. The other *nidanas* explained under the *dusti* of both the *srotas* are specific to *abhighata* causing *vata prakopa* and leading to *asthimajja kshaya*. *Purisadhara kala* and *asthidhara kala* are one and the same. Hence, involvement of the *purisavaha srotodusti hetu* in the pathogenesis of *asthimajja kshaya* should not be neglected. *Purisavega sandharana* leads to *udavarta*, further leading to *vata prakopa*. *Krisa sarira* is the main *lakshana* of *vata prakarti* person. Hence the *prakupita vata* causes *asthivaha srotodusti*. According to the modern science also, lean built and low body mass index (BMI) are the risk factors of osteoporosis. The role of *jatharagni* is explained as follows-the vitiation of *jatharagni* leads to the improper digestion of the *ahara* resulting in the production of *ama rasa* which contains very less *poshakamsas* or may totally be devoid of *poshakamsas* leading to improper

nourishment of the *asthi dhatu* resulting in *asthivaha srotodusti vikrti*.

The result of B.M.D is osteopenia due to *dhatu kshaya*, which ultimately aggravates *vayu*, and vice versa. After administration of *kapardaka Bhasma* the haemoglobin percentage increase 3.71%, ESR changes 0.63% which was significant ($p < 0.001$). In TLC, DLC there is mild variation occur which also significant ($p < 0.01$).

After the therapy blood glucose fasting and postprandial changes found which is significant at $p < 0.001$. Serum calcium is significant ($p < 0.02$). Serum phosphorus, serum alkaline phosphatase, blood progesterone, blood oestrogen, serum T3, T4, TSH all of them are significant ($p < 0.01$). In imaging test there is no significance changes found after administration of *kapardaka bhasma*. In this study, it shows that the bone mineral density was no significant even after therapy. The pharmacological properties of *kapardaka* as- *Rasa – Katu, Guna – Ruksha, Tikсна Vipaka- Katu, Virya – Ushna, Dosha Prabhava- Kapha-vataghna*.

CONCLUSION

Out of seven *dhatu*s, *asthi* is important as it holds the body in specific. *Dhatyagni* plays important role to produce *asthivaha srotodusti*. Owing to the *asrayasrayi bhava* between *asthi* and *vata dosha* the *prakopa* of the *vata dosha* is said to be the causative factor for the *asthivaha srotodusti*. *Kapardaka* has *ushna guna* and *katu rasa* and *vata kapha nashak* property and therefore it acts on *asthivaha srotodusti* based on *samanya siddhanta*. The obtained result highlight the dictum of treatise of ay-

urveda that *kapardaka bhasma* is selective medicine for *asthivaha srotodusti* and also a good remedy for the same though in B.M.D study and X- ray finding are not showing any changes yet clinically *kapardaka bhasma* giving relief to the patients on clinical perspectives.

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