

SHARIR KRIYATMAK STUDY OF MAMSADHATU IN PRAMEHA

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ABSTRACT

India is a vast, heterogeneous country with an approximate population of 1.1 billion people. 742 million people in India live in rural areas, ratio throughout the ages, in this 21st century, there have been changes in the lifestyle pattern over the world, especially our country India with effect of advanced technology our physical work is less. So due to this, most population suffer from a lifestyle disorder like Diabetes mellitus i. e. *Prameha* in Ayurveda. The reason behind the selection of *prameha* (Diabetes mellitus) was that the evidence of *prameha* is increasing day by day. According to *chikitsa* point of view, *nidanparivarjan* is ultimate way to all disease. Without proper knowledge of *hetusevan* and *dosha-dushya samgraha* we cannot give *nidanparivarjan* treatment to any patients. So keeping that basic principle of *chikitsa* in mind we are going to conduct an elaborative study of *mamsa dhatu* as a *dushya* in etiology of *prameha vyadhi*. Therefore, we can prevent this disease while understanding the role of *Mamsadhatu* in *prameha*. Diabetes Mellitus have recent evidence of insulin resistance cases and occurrence of side effects from prolong administration of conservational drugs has been seen commonly. The research done for safe and effective alternatives. Here Ayurveda with special focus on *Nidana* (etiology), *Dosha-Dushya*, *Samprapti* (pathogenesis), *Ahara* and *vihara* (diet and lifestyle) can contribute into the management of Diabetes. So there is extreme need to know the seriousness of disease and to understand the proper relation of *mamsa dhatu* in *prameha* to treat this issue of the society.

KEYWORDS: Physiology, Musculoskeletal system, *Dosha*, *Dhatu*, *Mamsa*.

INTRODUCTION

The first and foremost fundamental principle of Ayurveda is “*ayu*” or promotes life-span.^[1] Body is originally composed of *doshas*, *dhatu*s and *malas*. When three *doshas* (*vata*, *pitta*, *kapha*), *agni*, all the body tissues and components (*dhatu*s), all the excretory functions (*malas*) and all the physiological processes are in perfect order with a pleasantly and contented mind, sense and spirit.^[2] According to the principle of the formation of the ‘*Uttardhatu*’ from ‘*Purva dhatu*’ from *Aahar-rasa*, *mamsa dhatu utpatti* takes place (production). *Prasadabhaga* i.e. nutritive part of *Rasa dhatu* produces *Rakta dhatu*; *Parasada bhaga* of *Rakta dhatu* produces *Mamsa dhatu* and so on. The rising prevalence of diabetes is by factors- rapid urbanization, sedentary lifestyles, unhealthy diets, tobacco use and increasing life expectant. On the basis of its symptomatology *Prameha* can be correlated to the features of Diabetes mellitus. The complications of diabetes mellitus are more terrible than the disease itself. So there is intense need to know the intentness of the disease and to understand the basic *Ayurvedic* pathophysiology of *prameha*. For *Ayurvedic*

management of *prameha* the knowledge of *Dosha* and *Dushya* is most important. Hence, the present study is to establish the said relation between the two. Therefore, both *mamsa dhatu* as well as *Prameha* need to be studied and thought over deeply. So, the topic “*Sharirkriyatmak* study of *mamsadhatu* in *Prameha* (Diabetes mellitus)” is being selected. *Prameha* is a *vyadhi* there is a possibility of loss of combination of *dosha* and *dushyas*. Involved *dushyas* are *meda*, *mamsa*, *rasa*, *rakta*, *majja*, *vasa*, *kled*, *lasika*, *shukra* and *oja*.^[10] Except *rakta dhatu* all *dushyas* are *kapha* category, *meda* and *mamsa* are important *dushyas* and are compulsorily involved in all types of *prameha*. In ayurved *Samhita*’s, the relation between *mamsa dhatu* and *prameha* is described. Peculiarity of *meda* and *mamsa* is both have *bahu* (excess in quantity) and *abaddha* (*aghana* i.e. flabby or loosely bonded). There is *sharir shaithilya* (lassitude) in *prameha*.

AIM AND OBJECTIVES

The present study aimed at studying the *Mamsa dhatu* in patients suffering from *Prameha*. To achieve objectives were, to review the assessment of *mamsa dhatu* w.s.r. to *prameha* and observe the *mamsa dhatu* in *prameha*.

MATERIALS AND METHODS**Materials**

- Classical sign and symptoms of *Prameha*.
- Classical *Lakshanas* of *Mamsa Dhatu Kshaya-Vridhhi*.
- Investigations according to *Ayurvedic* and Modern parameters.

Methods

Patients had classical signs and symptoms of *Prameha* was selected for the study from O.P.D. and I.P.D. of our Hospital, of age group 30 years to 60years patients. The known cases of *Prameha* patients were subjected for the study.

Sample Size: 60 Patients.

INCLUSIVE CRITERIA

1. Patients given history of *Prameha* (Diabetes mellitus)
2. Gender- Both male and female patients selected.
3. Age-Patients between age group of 30 years to 60 years.
4. Previously diagnosed patients of *Prameha* (Diabetes mellitus).
5. All patients of type-2 Diabetes mellitus (Non-insulin dependent).

EXCLUSIVE CRITERIA

1. Age of patient less than 30 years and more than 60 years.
2. Patients suffering from any severe systemic diseases.
3. Patients having chronic disorders like IHD (Ischemic heart disease), T.B (Tuberculosis), AIDS (Acquired immune deficiency syndrome), etc.
4. Diabetes with other complications discarded.

INVESTIGATION

- 1) CBC (Complete Blood Count)
- 2) Blood Sugar level - a. Fasting
b. Post prandial
- 3) Urine examination - a. Routine examination
b. Microscopic examination

CRITERIA OF ASSESSMENT

Criteria for Diagnosis of *Prameha* by classical sign and symptoms:

1. *Prabhutmutrata* (Polyuria)
2. *Avilmutrata* (Turbidity in urine)
3. *Pipasadhikya* (Polydipsia)
4. *Kshudhadhikya* (Polyphagia \ Increase in appetite)
5. *Karpadasuptata* (Numbness in palm and foot)
6. *Karpadadaah* (Burning sensation in palm and sole)
7. *Swedadhikya* (Excessive perspiration/sweating)
8. *Daurbalya* (Weakness)

Sign and Symptoms of *Prameha* is correlated with Diabetes Mellitus. According to sign and symptoms of

Prameha was correlated with DM. So according to modern science criteria for Diagnosis of *Prameha*, By American Diabetic Association which is accepted by WHO was followed.

Criteria for Diagnosis of Diabetes Mellitus by WHO,

1. Sign and Symptoms of Diabetes mellitus
2. Patients having random blood sugar level > 200 mg/dl
3. Fasting Blood Sugar > 126 mg/dl
4. Post Prandial Blood Sugar > 200 mg/dl

Criteria for Diagnosis of *Mamsa dhatu dushti* by classical sign and symptoms

Mamsa pradoshaj vikara-Disease due to vitiated muscle tissue

1. *Adhimamsa* (extra growth of muscle tissue i.e. Tumor)
2. *Putimamsa* (Gangrene)
3. *Arbud* (Tumor)
4. *Kil, Galshaluk, Galshundika* (elongated Uvula or Uvulitis)
5. *Gandmala, Upjivhika* (Cystic swelling of tongue)
6. *Daurbalya* (Weakness)
7. *Alaji, Galgand* (Goiter)

Objective parameters

❖ Questioner baased on *mamsa kshaya – vridhhi* symptoms. following sign and symptoms are as:

1. *Kshaya Lakshana-*
2. *Dourbalya*
3. *Karshya*
4. *Sthoulya*
5. *Todvat vedana*
6. *Shaithilya*
7. *Sandhi shul*
8. *Mamsa peshi Sankoch*
9. *Mamsa peshi kathinyas*
10. *Adhimamsa*
11. *Arbuds*
12. *Putimamsa*
13. *Gurugatrata*

❖ Examination of parameters of Diagnosis of Muscle Deformity by sign and symptoms.**Symptoms of muscle deformity**

1. Muscle Pain
2. Muscle tenderness
3. Muscle stiffness
4. Muscle tightness
5. Muscle fatigue (by walking & climbing stairs)
6. Muscle weakness
7. Muscle wasting
8. Muscle wasting
9. Muscle cramps

❖ **Physical examination methods: Physical fitness – By Harward step test method**

Duration of exercise in seconds (300)

$$\text{Fatigue Index} = \frac{\text{Duration of exercise in seconds (300)}}{A + B + C} \times 100$$

❖ **Fatigue Index**

INDEX	FITNESS
Less than 55	Poor
55-64	Low Average
65-79	Average
80-89	Good
90 and more than 90	Excellent

❖ **BMI**

• Underweight	• <18.5
• Normal (healthy weight)	• 18.5-24.9
• Obese (overweight)	• >25

❖ **Muscle power**

Gradation of muscle power is as follows

Grade 0	No movements at all
Grade 1	Flicker of muscle if movements at tempted
Grade 2	Movement of joint eliminating gravity
Grade 3	Movement of joint against gravity
Grade 4	Movement of joint against gravity with moderate resistance
Grade 5	Movement of joint against gravity with strong resistance

OBSERVATION AND RESULTS

Table: distribution of patients according to *Mamsa dhatu Kshaya*.

Sr. No.	Symptom	No of Patients		Percentage	
		Present	Absent	Present	Absent
1	<i>Daurbalya</i>	35	25	58.33	41.67
2	<i>Karshya</i>	32	28	53.33	46.67
3	<i>Shaithilya</i>	32	28	53.33	46.67
4	<i>Sandhishula</i>	32	28	53.33	46.67
5	<i>Todvat Vedana</i>	30	30	50	50
6	<i>Sankocha</i>	27	33	45	55
7	<i>Kathinya</i>	30	30	50	50

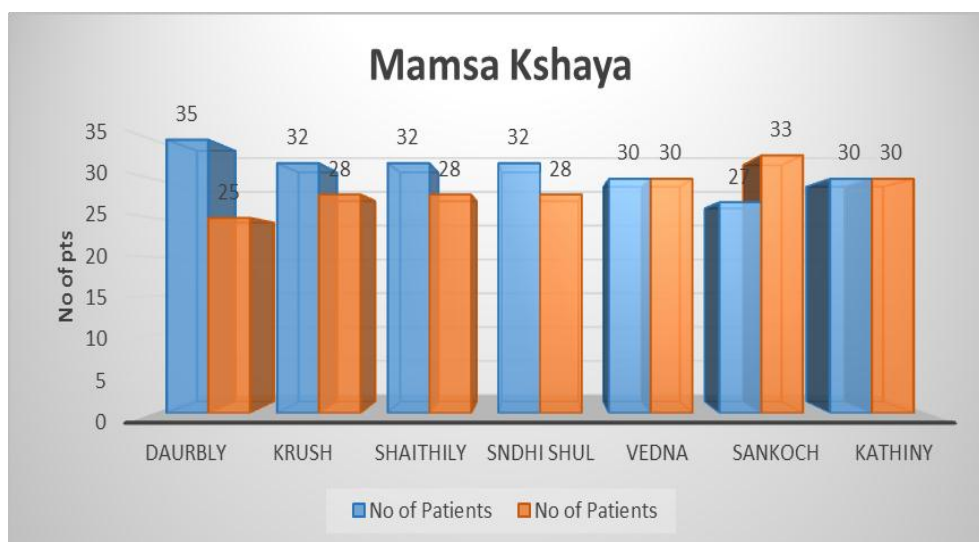


Figure no.1: Symptomwise distribution of *mamsa dhatu kshaya*.

Above data reveals that more than 50% patients of diabetes found *Daurbalya*, *Karshya*, *Shaithilya*, *Sandhishul* followed by 50% patients of diabetes found with *Todvat vedana* and *mamsapeshi kathinya* while

45% patients of diabetes had symptom of *mamsapeshi Sankoch*. Statistically there is significant changes observed in symptoms of *Mamsa Dhatu Kshaya* in patient of diabetes mellitus.

Figure no. 12: distribution of patients according to *Mamsa dhatu Vrudhhi*.

Sr. No.	Symptom	No of Patients		Percentage	
		Present	Absent	Present	Absent
1	<i>Gurugatrata</i>	21	39	35	65
2	<i>Sthaulya</i>	17	43	28.3333	71.6667
3	<i>Adhimamsa</i>	1	59	1.66667	98.3333
4	<i>Arbuda</i>	0	60	0	100
5	<i>Putimamsa</i>	2	58	3.33333	96.6667

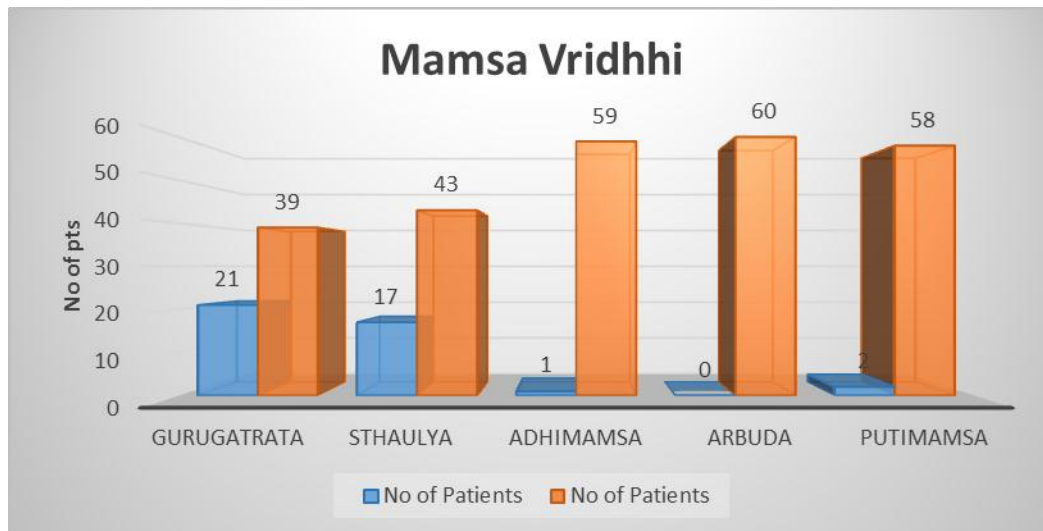


Figure no. 2: Symptomwise distribution of *mamsa dhatu vridhhi*.

Above data reveals patients of diabetes had absence of *Arbuda* symptom while *Gurugatrata*, *Sthaulya*, *Adhimamsa* and *Putimamsa* are found in 35%, 28.33%, 1.66 % and 3.33 % patients respectively. Statistically there is significant changes observed in symptoms of *Mamsa Dhatu vridhhi* in patient of diabetes mellitus.

DISCUSSION

Present study entitled “*Sharir kriyatmak study of Mamsadhatu in Prameha*” was done on 60 diabetic patients.

BMI In present- study shows that, there was 5 patients (8.3 %) in underweight, 31 patients (51.7%) were in normal weight, 24 patients (40%) had overweight.

BSL Present data reveals that out of 60 diabetic patients average value of fasting blood sugar level was 134.85 and post prandial blood sugar was 210.47. Most of the patients were with the marginal high blood sugar levels or not fully controlled by the modern medications.

Symptoms of muscle deformity

Present data depicts that in 60 diabetics patient's symptoms of muscle deformity in patients of diabetes mellitus, maximum number of patients i.e. 56.67 % had muscle pain, 56.67 % had muscle tenderness, 56.67 %

muscle cramps, 55 % had muscle stiffness and 53.33 % had muscle fatigue.

Muscle pain was found in 34 patients of DM. Persons with long lasting DM or not fully controlled by the modern medications developed muscle pain. Muscle tenderness was found in 34 patients of DM. This condition can be a result of long term high blood sugar levels. Muscle cramps was found in 34 patients of DM. Muscle cramps infrequent in people with or without diabetes. Muscle Stiffness was found in 33 patients of DM. This can enhance when glycosylation- the process of sugar molecules attaching to protein molecules- is increased and causes additional collagen in the skin. Also abnormal accumulation of proteins in body tissue can make stiffer. Muscle fatigue was found in 32 patients of DM.

Gradation of Muscle Power

In present study shows that, there are 28 patients (46.67%) found with muscle power grade 4 in diabetes mellitus patient i.e. movement of joint against gravity with moderate resistance and 32 patients (53.33%) found with grade 5 i.e. movement of joint against gravity with strong resistance. Muscle power less than mean neuropathic process underlies the impaired motor

performance. Present finding shows that muscle power gradation becomes insignificant.

Muscle fatigue index

In present study based on classification of fatigue severity majority of patient shows i.e. with 14 (21.7 %) had poor fatigues, 13 (21.7%) had low average and 13(21.7%) had average, while 11(18.3%) had excellent and 9(15%) had good fatigue index. Study shows that chronic conditions increase, the risk of developing fatigue index becomes poor. This study had no major diabetes related complications. Seriousness of disease was also moderately related to the diabetic symptom levels. This explains the fact that seriousness of disease does not add much to the variance in fatigue index in addition to diabetic symptoms. From this study, can interpret as fatigue index is poor in DM. Low fatigue index in type 2 diabetes is associated with physical inactivity. This explain that the diabetes responsible for the occurrence of poor physical fitness.

Kshaya symptoms of Mamsa dhatu

Above data reveals that *Daurbalya* is found in maximum patients of diabetes i.e. 58.33% followed by *Karshya*, *Shaithilya*, *Sandhishul*, having each symptom with 53.33%, *Todvat vedana*, *mamsapeshi kathinya* symptom 50% each and *mamsapeshi sankoch* are found in 45% patients respectively. *Daurbalya* is the symptom was found in maximum 35 patients, *mamsa dhatu* had improper nourishment so this symptom probably seen. *Karshya* was found in 32 patients, *mamsadhathu kshaya* that mean function of *mamsadhathu* that is 'Bala' of body get decreased and the body praportion, built also get lossed and *karshya* condition found. *Shaithilya* was found in 32 patients, *mamsa dhatu* correlate with the muscles to maintain posture of body (*Avshtambhaya Dehinam*) is function of *mamsadhathu* there is no nutrition to muscles i.e. to *mamsadhathu* so *mamsadhathu kshaya* appear as symptom of *Shaithilya*. *Sandhishul* was found in 32 patients, due to improper functioning of 'lepana' function of *mamsadhathu*. *Todavat vedana* was found in 30 patients *mamsa dhatu* resembles to *kapha dosha*. Vitiation in *mamsa* leads to vitiation of *kapha* and *vata dosha* get increased causing *todavata* type *vedana*. *Mamsapeshi sankoch* was found in 27 patients, 'Aakunchana' function of *mamsa dhatu* is disabled. *Mamsapeshi kathinya* was found in 30 patients this can correlate in modern with the muscle stiffness which may be seen more as complication of DM..

Vridhhi symptoms of Mamsa dhatu

In present series of patients most patients i.e. 21(35 %) patients had symptom of *gurugatrata*, it is because in DM *ras dhatu*, *rakta dhatu* then *mamsa dhatu* get vitiated due to *dhatvagnimandya* so this symptom can occur. *Sthaulya* was found in 17 (28.33 %) patients due to not proper *dhatwagni*, *mamsa dhatu* not get proper digested and had excess production then *meda dhatu* also get excess production by *kedarkulya nyaya* and due to *meda dhatu vridhhi* this symptom occurs. *Adhimamsa*

was found in 1 (1.67%) patient is also due to vitiation of *mamsa dhatu*, over production of *mamsa dhatu* there is excess growth of muscle tissue. There were no any patients found with symptom of *Arbuda*. *Putimamsa* was found in 2 (3.33%) patients in DM excess growth of *mamsa dhatu* i.e. vitiation of *mamsa dhatu* which converted as a complication of DM to cause muscle putrification.

Overall result on different Parameters

Sr.no.	Parameters	P value	Interpretation
1.	Muscle power	> 0.05	Insignificant
2.	Muscle fatigue index	< 0.05	Significant
3	Muscle deformity	< 0.05	Significant

CONCLUSION

Patients having Diabetes shows maximum symptoms of *Mamsa dhatu kshaya*. About more than 50% patients of DM found with *Karshya*, *Shaithilya*, *Sandhishul*, *Todvat Vedana* and *Mamsapeshi kathiya* were 45% patients of DM found with *Mamsapeshi sankoch*. There is no significant difference in Modern parameters of Diabetic patient in Muscle Power Examination. As the result regarding the Muscle Fatigue Index of Diabetic Patients is statistically significant, so it is concluded that there is significant decreased of muscle fatigue index parameters. Also Patients having Diabetes shows maximum symptoms of Muscle deformity. About 33 patients of DM found with max. symptoms of Muscle deformity and result is statistically significant. So it is concluded that Muscle deformity is significantly present in *Prameha*. Thus it can be concluded that there is relation between *Mamsadhathu* and *Prameha*. While dealing with diabetic patients one should focus on vitiated *Mamsa Dhatu*. So the present study shows that there is a role of *Mamsa Dhatu kshaya* in *Prameha*. Our study indicated that *Mamsa Dhatu* is significantly and quantitatively reduced in *Prameha*.

REFERENCES

1. Dr. Anantaram Sharma, Sushrut Samhita, (hindi commentary), Varanasi: Chaukhambha surbharati prakashan, 2013 sutrasthana 1/14, p.9.
2. Dr. Anantaram Sharma, Sushrut Samhita, (hindi commentary), Varanasi: Chaukhambha surbharati prakashan, 2013 sutrasthana 15/47, p.130.
3. Dr. Anantaram Sharma, Sushrut Samhita, (hindi commentary), Varanasi: Chaukhambha surbharati prakashan, 2013 sutrasthana 15/3, p.114.
4. P.V. Sharma, Charak Samhita, volume 2, (hindi commentary), Varanasi:2014, chaukhamba orientalia, chikitsasthana, 15/16, p.251.
5. Dr. Mohit Kumar and et, al., Review article on mamsa dhatu- Ayurveda and modern view, JAISMS, VOL.4 ISSN 2456-31102019.
6. P.V. Sharma, Charak Samhita, (English commentary), vol.1, Varanasi: 2014, chaukhambha orientalia, nidansthana, 8/11, P. 295.

7. P.V. Sharma, Charak Samhita, (English commentary), vol.1, Varanasi: 2014, chaukhambha orientalia, chikitsasthana,6/8, P. 117.
8. Pt. Hari Sadashiv Shastri Paradkar, Ashtanga Hridaya of Vagbhata, repr- Nidansthana, chapt-10, sutra 4, Arundatta and Hemadri commentary, chaukhambha surbharati prakashan, edition-2010, ISBN:978-93-80326-76-4, P.502.
9. Anjana R.M. et.al.- The need for obtaining accurate nationwide estimates of diabetes prevalence in India, Indian J med res. (April2011), 133:369-80, Madras diabetes research foundation, Chennai India, publication type MeSH; PMCID: PMC310316.
10. P. V. Sharma, Charak Samhita, (English commentary), vol.1, Varanasi: 2014, chaukhambha orientalia, nidansthana, 4/6-7, p.270.
11. Amol Kumar - Conceptual Study of Prameha, (22 may 2014), www.Balaji.com
12. Dr. Sharma Anantaram, Sushruta Samhita (Hindi commentary) Vol. 1, Varanasi: chaukhamba surbharati prakashan, (re-print 2013), sutrasthan 14/20, p.105.
13. Prof. K.R. Murthy, Sushrut Samhita, (English commentary), varanasi, 2017, vol.1, chaukhamba orientalia, Sutrasthana, 14/20, P.91.
14. Dr. Anantaram Sharma, *Sushrut Samhita* (Hindi commentary), vol.2, Varanasi; chaukhamba surbharati prakashana, (2013), sharirsthan, 5/6; p.70.
15. P.V. Sharma, et al., Charak Samhita, (English commentary), Varanasi, vol.2, Chaukhambha orientalia, 2014, Chikitsasthana, 15/16, p. 251.