



ROLE OF PANCHA TIKTA GHRITA GUGGULU ON MAJJA KSHAYA W.S.R. ERYTHROPOIESIS

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ABSTRACT

Majja Dhatu is the body component similar to bone marrow, the soft organic material that fills the cavities of the bones. Bone marrow is composed of hematopoietic cells, marrow adipose tissue and supportive stromal cells. Bone marrow is primary site of new blood cell production or hematopoiesis. According to ayurveda, only due to healthy majja dhatu, rakta sara & Majja sara purusha exists. When majja dhatu is in healthy state, best quality of hematopoiesis occurs & nourishment of shukra dhatu takes place. Mridwanga, balavanta, snigdha varna & gambhira swara, sthula-dirgha vritta sandhayah and maha netra are the benefits occurs in majja sara purusha. In this clinical study, total 30 patients having the complaints of bhrama and timira darshanam as mentioned by acharyas in majja kshaya, the main symptoms of a majjakshaya related with poor erythropoiesis were treated with Panchatikta Ghrita Guggulu. Results proved that Panchatikta Ghrita Guggulu provided significant relief in the disease majja kshaya w.s.r. to erythropoiesis.

Key words: Majja dhatu- bone marrow, Bhrama, Timira-darshana, Erythropoiesis,

INTRODUCTION

Ayurveda recognizes seven tissue layers known as the Dhatu, which work together in harmony to create our physical structure & support our overall state of health & well-being. The sixth tissue in this system, after rasa-rakta-mansa-meda & asthi, is known as Majja dhatu. Bone marrow can be considered as a part of majja dhatu, playing a significant role in erythropoiesis. According to shabdakalpadruma, whatever the unctuous material found inside the bone is called Majja.

FORMATION

Normally asthi dhatu is responsible for formation of majja dhatu in the body. Asthi dhatu contains majja dhatu sadharmi-ansha. When this majja dhatu sadharmi ansha comes in contact with majja dhatu agni, it gets converted into majja dhatu in the body due to ushna guna of agni. According to Acharya Charaka, ususally the vayu mahabhuta creates spaces or holes in the asthi dhatu & at the same time these spaces are filled up with the snigdhansha of medo dhatu. Later that snehansha is known as majja dhatu.

The amount of majja dhatu in the body is about 1 anjali. The root of majjavaha srotas is asthi & sandhi. Mala of majja dhatu are unctuous part of the excretion of the eyes and unctuous part of the feces. According to Acharya Sushruta, the main functions of majja dhatu in the body are:

- ❖ Provides satisfaction or pleasure to both body and mind
- ❖ Gives unctuousness to asthi dhatu and body
- ❖ Provides strength to both bone and body
- ❖ Gives nourishment to shukra dhatu and fills the pores of asthi dhatu in the body



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The person who is having fully developed majja dhatu in the body since birth is known as majja sara purusha. Such types of purusha will get some benefits like tanvanga/krisha (slim figure/body), Balavanta (strong physique), snigdha varna & gambhira swara (good complexion and pleasant and heavy voice), sthula-dirgha vritta sandhayah (joints are bulky, long and rounded), maha netra (big eye).

MAJJADHATU-KSHAYA:

Excessive diminution of *majja dhatu* in the body gives rise to some signs and symptoms like soushiyra (osteoporosis), shiryanta (thinness), weakness, lightness and pricking types of pain to bone and other phalangeal joints. Apart from this it also causes vertigo, blurring of vision. Lastly bones are always afflicted with the diseases due to vata dosha.

Vitiation of majjavaha srotas in the body is caused by repeatedly crushing of bones, excessive liquefaction, repeatedly getting injury to bones, excessive compression to bone and regularly intaking of mutually contradictory food and regimen are the different causes, which cause vitiation to the majjavaha srotas in the body.

Excessive vitiation of majja dhatu gives rise to ruk parvana, bhrama (giddiness), murccha (fainting), tamo-darshana (feeling of entering into the darkness), arumsha (manifestation of deep seated abcess in the joints and difficult to treat), heaviness to the eyes and different parts of the body, conjunctiva etc.

According to modern science, bone marrow and myeloid tissue are often used synonymously. Myelos meaning marrow is confined in the cavities of the bone in the post-natal life. Normal bone marrow is a cellulo-vascular tissue, which is semi-fluid during life. It is found in cancellous spaces and medullary cavities of the bone. Bone marrow is of two types i.e. Red bone marrow and Yellow bone marrow. Red bone marrow contains of all types along with their precursors, fat cells, blood vessels and framework of reticulam. Red cells are actively manufactured here. In foetal stage almost of all bones contain red bone marrow. But with the advancement of age, this is gradually converted into yellow types. In adults, red bone marrow is found in vertebrae, sternum, ribs, skull, ends of the long bones and innominate bones of the pelvis.

Yellow bone marrow is consists of fat cells or adipose tissue, blood vessels, some reticulam cells and fibres. Here red cells are not manufactured.

When there is a necessity of increased erythropoiesis, the yellow bone marrow is converted into red bone marrow. If the necessity is still more intense, even the liver and spleen start erythropoiesis in the adult.

AIM AND OBJECTIVES:

The aim of the present study was to evaluate the role of *PANCHA TIKTA GHRITA GUGGULU* on *Majja Kshaya* w.s.r. erythropoiesis.

Materials and Methods

Total 30 Patients of *Majja kshaya* were registered on the basis of classical signs, symptoms & relevant B.M.D. test and hematological test in camps organized at NIA Jaipur. The patients were selected randomly irrespective of their age, sex, religion etc. All the selected patients were further investigated for inclusion and exclusion criteria. The detailed account of Clinical history was taken & physical examination



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of each patient was undertaken on the basis of the Performa. Written consent was taken from each patient after giving him detailed information about the treatment.

INCLUSION CRITERIA

1. Age group 30-70 years.
2. Presenting the classical signs and symptoms of *majjakshaya*.
3. Not taking any other medicine.
4. Subject ready to abide by trial procedure and to give informed consent.

EXCLUSION CRITERIA

1. Age less than 30 years and more than 70 years.
2. Patient suffering from osteoporosis and haematological disorders due to genetically and inherited disorders.
3. Juvenile osteoporosis.
4. Pregnant and Lactating Women.
5. Osteoporosis due to hypogonadism.
6. Patient suffering from venereal diseases and diabetes.
7. Patients suffering from hepatitis, AIDS, malignancies, TB and cardiac disorders.
8. Patient suffering from mental and acute or chronic infectious disorders.

Criteria for diagnosis:

The criteria of diagnosis were based on the signs and symptoms of *majjakshaya* and relevant physical examination carried out. In addition to this BMD test and hematological test was carried out in all the patients to confirm diagnosis as well as to exclude the normal patients.

TRIAL DRUG

Panchtikta ghrita guggulu (पञ्चतिका-गुग्गुलु) was prepared in the pharmacy of National Institute of Ayurveda

ADMINISTRATION OF DRUG

Dosages –

3 gms B.D. Before Meal, *Anupaana* – Luke warm water, Duration – 3 months

Gradation for Clinical Assessment:

Improvement in the patients was assessed on the basis of relief in signs and symptoms of the disease. All the signs and symptoms were given scoring depending upon their severity to assess the effect of treatment.

Bhrama-Vertigo

1	No bhrama	0
2	Fairly bhrama for some moment during change of posture.	1
3	Often bhrama for some moment during change of posture.	2
4	Often bhrama for each moment in lying condition also.	3



5	Patient unable to hold himself with any support.	4
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- **Timira-darshanam-** Darkness in front of eyes

1	No tama	0
2	Occasional tama darshana for short duration	1
3	Occasional tama darshana for small duration leads to bhrama.	2
4	Frequent tama darshan for small duration leads to bhrama	3
5	Frequently tama-darshana for longer duration.	4

16. Investigational assessment

Blood Investigation	B.T.	A.T.
Hb gm %		
Serum Calcium		
Bone mineral density		

RESULTS

TABLE NO. 1 SHOWING THE PATTERN OF CLINICAL RECOVERY IN 30 PATIENTS OF MAJJAKSHYA

Symptoms	N	Mean		Diff.	% of relief Acc.to mean	S.D. (+) (-)	S.E. (+) (-)	T value	P value	Results
		BT	AT							
<i>Bhrama</i>	30	1.16	0.23	0.93	80.17	0.63	0.11	7.99	<0.0001	HS
<i>Timir darshnam</i>	30	1.33	0.40	0.93	69.92	0.63	0.11	7.99	<0.0001	HS

Table No: 2. SHOWING THE PATTERN OF LABORATORY TEST CHANGES IN 30 PATIENTS OF MAJJAKSHAYA

Parameter	Mean		Diff.	% of Change	SD	SE	T Value	P Value
	BT	AT						



									Result
Hb gm %	12.22	12.61	-0.39	5.15	1.01	0.18	2.11	0.43	S
S. Calcium	9.71	10.04	-0.33	3.39	0.81	0.14	2.26	0.03	S
B.M.D	-3.46	-1.89	-1.56	45.08	1.62	0.29	5.30	<.0001	HS

In Hematological Parameters, significant results were found in hemoglobin percentage, S. calcium and highly significant results in BMD.

Effect of therapy on *bhrama* Data shows highly significant improvement in *bhrama* (80 %, $p < 0.0001$).

Effect of therapy on *timira darshana* There was highly significant improvement in *timir-darshnam* (70%, $p < 0.0001$)

TOTAL EFFECT OF THERAPY

Total effect of therapy has been evaluated in terms of cured, maximum improvement, moderate improvement, mild improvement and unchanged. Out of 30 subjects, 6 (20%) subjects showed maximum improvement in all symptoms ranging in between 75% to 99%, 20 (66.67%) subjects showed moderate improvement in all symptoms ranging in between 50% to 75%, 4 (13.33%) subjects showed mild improvement ranging in between 25% to 50% (Improved) and none subject remain Unchanged or complete cure i.e. those subjects presenting less than 25% improvement or 100% cure.

Discussion

The pathology of *Majjakshaya* starts in two ways-

1. *Santarpan janya*:-*Ama-Utpatti-Jathragni Mandya- Mamsa Medo-Sroto Avrod,-Asthi Majja Poshan decrease-Asthi Majja Kshaya*
2. *Aptarpan janya*:-*Srotasama Kha Vaigunya-Vata increase- Majja Poshan decreases-Majja Kshaya*

Chikitsa mainly consists of *Samprapti Vighatana*.

In *Santarpan Janya* pathology of *Majjakshaya*, *Ama-Utpatti* and *Jathragni Mandya* is to be prevented or cured. For this type of *Samprapti Vighatan*, in *Panch Tikata Ghrita Guggulu* most of the drugs have *Deepana*, *Pachana*, *Rochana*, *Dhatvagnivardhak* properties due to *Tikta Rasa*, *Katu Vipaka* and *Ushna Virya*. As *Dhatvagni* increased, nutrition of all *Dhatu*s also increased. As a result, by *Majja Pushti*, *Majja Kshaya* decreased.

In *Aptarpan Janya* pathology of *Majja Kshaya*, *Vata* increases due to *Aptarpan*. So *Vata Shamak* and *Pushtikar* drug should be used. In *Panchtikta Ghrita Guggulu*, majority of the contents have *Ushna Virya* i.e. *Vata Shamak*. *Goghrita* is *Vata Pitta Shamak*, *Balya*, *Agnivardhak*, *Madhur*, *Saumya*, *Vrishaya* and *Vaya Sthapak*. So the drug pacified *Vata*, improved the general condition of body and acted as rejuvenator of the body. *Goghrita* is *Yogvahi* which is helpful in increasing bio-availability of other drugs without losing its own property. Thus, helps in *Aptarpanjanya Samprapti Vighatan* of *Majjakshaya*.



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Improvement in *bhrama* and *timira darshnam* may be because of *vata-shamak*, *nadi balykar*, *raktvardhak*, *balya* and *vrishay* properties of *giloy*, *guggulu*, *goghrita*, *vayavidang*, *gajpipalli*, *shunthi*, *haridra* etc.

As *dhatukshaya* was reduced by *rasayana*, *balya*, *dhatvagnivardhak*, *daurbalyanashak*, *amapachan* action of most of the drugs, *ahara rasa* was converted into *prakrit* subsequent *dhatu*s, thereby increasing *rasa* and *rakta* which results in increase in Hb% and RBC. Hb% is also increased due to *majja pusti*. As *majjakshaya* is decreased, erythropoiesis will be better and Hb% increased. Some drugs like *giloy*, *guggulu*, *gajpipalli*, *haridra*, *pippimula* and *goghrita* have specially *raktavardhak* action. So Hb% also increases.

As *asthi dhatu poshana* increased, the value of S.calcium also increased which is statistically significant.

Asthi-majja poshan increased by *dhatvagni* and *dhatu vardhak* drugs by which Bone mineral density also increased which is highly significant. *Goghrita* contains vit.D which plays an important role to utilize calcium and phosphorus in blood and bone building.

CONCLUSION

From the above study, it is observed that *panchikttaghrita guggulu* is *vata-pittahara* in quality hence effective in prevailing the disease. *Panchikttaghrita guggulu* is safe, economical and effective remedy to reduce the signs and symptoms of *majjakshaya w.s.r.to erythropoiesis*.

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