

**“A CLINICAL STUDY OF ABHA GUGGULU IN BHAGNA WITH SPECIAL REFERENCE TO LONG BONE FRACTURE”**

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**ABSTRACT**

Trauma management has been in practice since *Vedic* periods. This part of the treatment in *Ayurveda* is called *Bhagna Chikitsa*. Many of the principles of fracture treatment described by *Acharya Sushruta* centuries ago, are still relevant & used in the present time for the management of fracture. Trauma is the main cause of dislocation (displacement of the joint) or fracture (break in the continuity of a bone) of a bone. Loss of movements like flexion, extension etc, severe pain on the slight touch<sup>[1]</sup>, swelling in the affected part, deformity, crepitus, no relief of pain in any posture<sup>[2]</sup> are the important symptoms, which are present in fractured patients. A clinical trial was conducted in a group of 15 patients including both male & female, diagnosed on

the basis of sign & symptoms of *Bhagna*/fracture. Patients were selected randomly irrespective of their religion, race, occupation etc. They were administered *Abha Guggulu*, a herbal formulation, at a dose of 2 tablet trice a day with luke warm water or milk for three months and were observed at the interval of every 15 days during the study period.

**KEYWORDS:** *Asthi, Bhagna, Bhagna Chikitsa, Abha Guggulu.*

**INTRODUCTION**

*Ayurveda* is a complete science of life, where we get elaborate description about preventive aspect of the diseases in a healthy individual as well as in the management of diseases. One

of the common problem and challenge to modern world is trauma and the management of skeletal system injuries, which occurs as the result of trauma in most of the cases. Such skeletal injuries are well explained with their classification and treatment in *Ayurvedic Literature*.

The traumatic conditions of skeletal system injuries are as old as the evolution of human beings. The accidental injuries are unavoidable incidences from the day of origin of mankind to till today. Once an injury has been received, it is natural reflex of our body to make it to heal in a quicker & better way. The word orthopedic in modern surgery denotes straightening of the bent limbs and in *Ayurveda Bhagna Chikitsa* denotes correction of broken bones. When there was no existence of any system of medicine in those days an advanced orthopedic surgery existed & practiced with almost perfection. The concepts mentioned by *Acharya Sushrut* are based on vast clinical experience & observation.

Throughout history and even today, traditional herbal medicine has been the mainstay of medical practice. This long tradition of herbal wisdom has employed various herbs to speed up the fracture healing. Herbal medicine can be an effective way to reduce the swelling, pain, soreness of fracture & can also accelerate the healing when used under the guidance of an experienced practitioner. There are also number of herbal drugs, which are easily available, are mentioned by our *Acharyas* for the management of *bhagna* to improve the union of fractured bone & to rule out the complications. *Abha guggulu*<sup>[3]</sup> is one of them, hence a clinical trial was conducted to evaluate the efficacy of *Abha Guggulu* in the management of *Avran Kand Asthi Bhagna* with special reference of long bone fracture. The nature of the study was entirely clinical and importance was given on the relief of sign and symptoms.

### **Aims & Objectives of the Study**

1. The main aim of the present study is not only to relieve the symptoms of the long bone fracture but also to prove the efficacy of Herbal medicine.
2. *Ayurvedic* preparations, which are having minimal side effects and no complications, even in aged persons also, can be given.
3. To establish and encourage the use of herbal medicine.
4. To prevent post immobilization complication in long bone fracture.

## MATERIALS AND METHODS

Patients were registered from O.P.D and I.P.D, Department of Shalya Tantra, Rishikul Campus Haridwar Uttarakhand Ayurved University. Patients were selected irrespective of their religion, race, occupation etc., fulfilling the selection & eligibility criteria & informed written consent was taken. Total number of 15 patients were studied.

### Selection of Drug

*Abha Guggulu* as per *Bhaishjya Ratnawali*.

### Drug Dosages

Two tablet thrice a day orally with luke warm water or milk.

### Selection of Sample

Randomized Sampling.

### Duration of Study

12 weeks.

Assessment will be done on every two weeks.

**Follow Up:** Another 04 weeks.

### Inclusion Criteria

- Age 10 to 60 years.
- Both Male & Female patient.
- Only Long bone fractures.
- Fractures free from complications like infection, wound / ulcers etc.
- Patient willing to undergo for trial.

### Exclusion Criteria

- Patient unwilling to undergo for trial
- Patient of compound fractures/multiple fractures
- Patient associated with systemic illness like DM etc.
- Patient associated with other bone disease like bone cyst, myeloma, osteomyelitis etc.
- Patient undergoing internal fixation.

## Investigations

### A. Blood Examination

- Hb%, T.L.C., D.L.C., E.S.R., .Blood sugar (RBS, FBS, PP), S/Bilirubin, H.I.V, HbsAg to assess the general condition of patients.
- Blood urea and Serum creatinine to assess the functional status of urinary system.

### B. Urine examination

**C. Radiological examination:** Most important investigation so far as the bone and joint injuries are concerned. At least two view-antero-posterior and lateral, should be taken to determine which bone has been fractured and the line of fracture. The anterior view shows side wise displacement-external or internal, while lateral view reveals-anterior and posterior displacement.

## Parameter of Assessment

### (A) Subjective Parameter

#### 1 Pain (*VEDANA*)

- Grade0-No pain
- Grade1-Mild pain
- Grade2-Moderate pain
- Grade3-Sever pain.

#### 2 Swelling (*SHVAYATHU*)

- Grade0-No swelling
- Grade1-At site
- Grade2-At related joint
- Grade3-whole limb.

#### 3 Tenderness (*SPARSH-ASAHISHNUTWAMA*)

- Grade0-No tenderness
- Grade1-Patient winces
- Grade2- Patient winces & withdraw affected part
- Grade3-Patient does not allow to touch the part.

#### 4 Movement (*PRASARAN-AKUNCHAN-ASHAKTI*)

- Grade0-Complete active movement

- Grade1-Movement restricted to a certain posture
- Grade2-Movement with support
- Grade3-No movement/Loss of function.

### (B) Objective Parameter

**Radiological** (Two AP view / Two lateral view)

Bridging cortices.

- 1) Fracture line not seen -0
- 2) Fracture line fairly seen -1
- 3) Fracture line clearly visible -2.

### Statistical Analysis

PARAMETRS (SUBJECTIVE)	BT	Day 15	Day 30	Day 45	Day 60	Day 75	AT	N	Friedman's Test	P-Value	% Effect
<b>Pain</b>	6.53	5.00	4.00	2.50	1.00	0.90	0.50	15	81.060	0.000	82.00
<b>Swelling</b>	7.00	5.80	4.67	2.63	2.30	2.00	1.80	15	84.503	0.000	88.50
<b>Tenderness</b>	6.50	5.00	3.50	1.50	1.30	1.00	0.75	15	90.000	0.000	79.50
<b>Movement</b>	6.57	6.37	4.60	3.67	3.30	1.97	1.53	15	83.130	0.000	76.60

### OBSERVATION AND RESULT

#### Assessment of Total Effect of Therapy

The overall assessment was calculated on the basis of average improvement in terms of percentage relief of scores.

1. Completely cured - 100%
2. Marked improvement - 75% to <100%
3. Moderate Improvement - 50% to <75%
4. Mild improvement - 25% to <50%
5. Unchanged - Below 25%.

#### Assessment of Subjective Symptoms

Since observations were on ordinal scale measured on specific interval of time (every 15 days). We have used Friedman's test to test the efficacy.

**Effect on Pain-** Percentage effect on Pain is 82%. Initial mean score is 6.53 which is reduced to 0.50, P-value is less than 0.05, hence we conclude that effect observed is significant in relieving pain.

**Effect on Swelling-** Percentage effect on Swelling is 88.5%. Initial mean score is 7.00 which is reduced to 1.80, P-value is less than 0.05, hence we conclude that effect observed in swelling is highly significant.

**Effect on Tenderness-** Percentage effect on Tenderness is 79.5%. Initial mean score is 6.50 which is reduced to 0.75, P-value is less than 0.05, so we conclude that effect observed in tenderness is also significant.

**Effect on Movement -** Percentage effect on Movement is 76.6%. Initial mean score is 6.57 which is reduced to 1.53, P-value is less than 0.05 hence we conclude that effect observed in movement is significant

### Assessment of Objective Symptoms

After clinical diagnosis of fracture, X-ray investigation was performed to confirm it. The X-ray enables a surgeon to know about type of fracture, plane of fracture, displacements in terms of shift, angulations, shortening, rotation and distraction.

Percentage effect Radiologically seen is 72.2%. Initial mean score is 3.00 which is reduced to 0.83 & P value is less than 0.05 hence we can say that effect observed is significant.

### Estimation of Overall Response

Effect of Therapy	Number of Patients	Percentage
COMPLETELY CURED	11	73%
MODERATE IMPROVEMENT	03	20%
MILD IMPROVEMENT	01	07%
UNCHANGED	00	00%
TOTAL	15	100%

### DISCUSSION

The most commonly observed signs in fractured patients were pain & swelling. To assess these signs and symptoms they are graded as per their characters. As the aim of clinical study was to assess the effects of *Abha Guggulu* in fracture healing, pain & swelling, which are important symptoms of fracture. The observations towards pain & swelling show that there was drastic relief in pain & reduction in swelling after administration.

### Probable Mode of Action of Abha Guggulu

If ingredients of *Abha guggulu* are analyzed then it is seen that it's main content is *Guggulu* and maximum of the other drugs comprise of *Kashaya rasa* (50%).

- *Kashaya rasa* is the dominant one (50%) in present compound formulation. *Kashaya rasa* represents the presence of Tanins which are usually act as antihistaminic, thus reduces the swelling, as it helps to absorb all the water content(extra & intra cellular). *Kashaya rasa* is having *Shothahara*, *Ropana* (*sandhaniya property*) which helps to check the suppuration and inflammation which allows the broken tissues and bones to unite and heal properly.
- Most of the contents in this trial drug are of *Ushna Veerya* (75%). *Agni Mahabhuta* is predominantly present in *Ushna Veerya dravya* which plays a major role to reform the properties of *Vata*, as *Asthi* is the site of *Vata*. It performs *deepana*, *Pachana* and *Srotoshodhana* karma as by correcting the *Jatharagni*, thus, by augmenting the *Srotas* clearance from *Ama* and *Kapha* obstruction. Proper digestion of food occurs and so is the nourishment action imparted by *dhatu*.
- It is mainly due to *Madhura Vipaka* (62.50%) causes the expulsion of *mala & mutra* from the body and releases the toxins from joints as well as remove mala-graha by pacifying the *vata* in *pakvashaya*.
- This formulation has maximum (50%) of *Tridoshahara* action, thus pacifying all the *vitiated dosha*, even locally.
- On modern parameter it can be postulated that the drug might have reduced the swelling by its anti-inflammatory and muscle relaxant properties. Further these drugs may have acted locally as well as systematically by reducing the tenderness at the fracture site and relieving in pain also. Based on discussion regarding the properties and analysis of *Abha Guggulu* due to its contents, can be considered as having an **analgesic, antiseptic, anti-inflammatory, antimicrobial** and bio-stimulator property.

## CONCLUSION

This research work entitled “A *Clinical Study Of Abha Guggulu In Bhagna With Special Reference To Long Bone Fracture*” has been carried out on the basis of literature review and drug review as well as clinical contrive including observations and results of trial formulations. After the vivid discussion on the basis of observation following conclusions are drawn. Both percentage wise & statistically, results are satisfactory. Administration of *Abha Guggulu* is an effective therapy without any adverse effects & also helps to avoid the surgical procedure. Thus, the present study revealed that the ancient management is safe, easily available, devoid of complications and has better acceptability.

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