


Research Article
TO STUDY THE EFFECT OF GUGGUL, LAKSHA AND ARJUN CHURNA IN THE MANAGEMENT OF KANDA BHAGNA
Sushant Jagdale^{1*}, Bharat Rokade², Umesh Vaidya³
¹P.G.Scholar, ²Associate Professor, ³Professor and Head, Dept. of Shalya Tantra, Bharati Vidyapeeth Deemed University College and Hospital of Ayurveda, Katraj-Dhankawadi, Pune, India.

ABSTRACT

Ayurvedic texts have illustrated fracture as being the loss in the continuity of the bone due to pressure. The management of long bone fracture runs through the basic principle of fracture management e.g. - Reduction, Immobilisation and Rehabilitation. In ancient treatise so many indigenous compounds are mentioned which can promote the healing of fracture. With reference to Vangasen, an indigenous compound named as *Guggul*, *Laksha* and *Arjun Churna* is also praised for *Bhagna sandhaana*. Taking this reference into consideration *Arjun Guggul* and *Laksha churna* was taken for the study. Fracture management was according to the basic principle of management of fracture i.e., pop casting was done. The *Churna* of *Arjun*, *Guggul* and *Laksha* were made according to the method given in Bhaishajya Ratnavali. In all 30 patients were treated in which 15 patients were treated with *Arjun*, *Guggul* and *Laksha churna* and was given with milk. Rest 15 patients were treated with the calcium supplement. Follow-up was taken on 0, 15th, 30th and 45th day. During this study it was observed that on zero days there was tenderness as well as pain present but there was no bluish discoloration and also movements of digits were there. On 15th day there was mild pain and tenderness. But swelling was not present as well as callus formation was not there. In this study it was observed that callus formation was late in first group as well as pain tenderness and swelling was decreased early. In the 2nd group pain, tenderness and swelling was decreased and also callus formation was seen early compared to 1st group.

KEYWORDS: *Kanda Bhagna*, Fracture, *Guggulu*, *Laksha*, *Arjuna Churna*.

INTRODUCTION

Trauma is a major problem worldwide, due to widespread industrialization and use of vehicles, where incidence of accidents resulting in fracture and soft tissue injury is higher. Traumas is the 6th leading cause for deformity and cause to death. Thus, fractures and dislocation provides a scope for intense study. Man has learned treatment for wounds and injuries from nature. Ayurvedic texts have illustrated fracture as being the loss in the continuity of the bone due to pressure². The management of long bone fracture runs through the basic principle of fracture management e.g. -1.Reduction, 2. Immobilisation and 3. Rehabilitation¹. Even after following basic principles, sometimes the fractures may not heal properly and leads to complications like non-union, mal-union, avascular necrosis, shortening of limbs etc. According to the modern principles of management, fracture is reduced, immobilized and then the role of medicine is negligible³.

MATERIALS AND METHODS
1) Source of Data

- Patients with all types of fractures were selected from OPD and IPD of Bharati Ayurved hospital, Pune.

2) Materials Required for the Study

- *Guggul*, *Laksha* and *Arjun churna* were prepared by standard method as explain in "Bhaishajya Ratnavali."
- POP bandage rolls

- Cotton, Gauze – as required.

Methods
Grouping AND Treatment / Procedure

- G1- **Trial group:** 15 Patients were treated by the basic principle of fracture management with *Guggul*, *Laksha* and *Arjun Churna* 500 mg orally after meal with milk.
- G2 - **Control group:** 15 Patients were treated by the basic principle of fracture
- Management (without *Guggul*, *Laksha* and *Arjun Churna*).
- Initially all the patients were treated with Reduction and Immobilization. During Treatment, the patients were regularly observed. The changes were noted in the specially prepared case sheet. The observations were analyzed on the basis of assessment parameters critically & scientifically before, during & after treatment on 0th, 15th, 30th & 45th day. Finally the result was statistically evaluated for its significance.

Parameters of Assessment

The clinical Assessment will be done with the initial findings through clinical and radiological statements & compared with the result of changes on 15th, 30th & 45th day.

1. Pain: Assessed by medical research council grading of pain.

0 : Normal (no pain)

- + : Mild (localized feeling of pain during movement, but not during rest)
- ++ : Moderate (localized feeling of pain during rest, but not disturbing sleep)
- +++ : Severe (localized continuous feeling of pain, radiating & not relieving by rest)

- ++ : Moderate tenderness
- +++ : Severe tenderness

3. Swelling: in accessible cases

- 0 : No Swelling
- 1 : Swelling

4. Radiograph: Visible callus on X-ray.

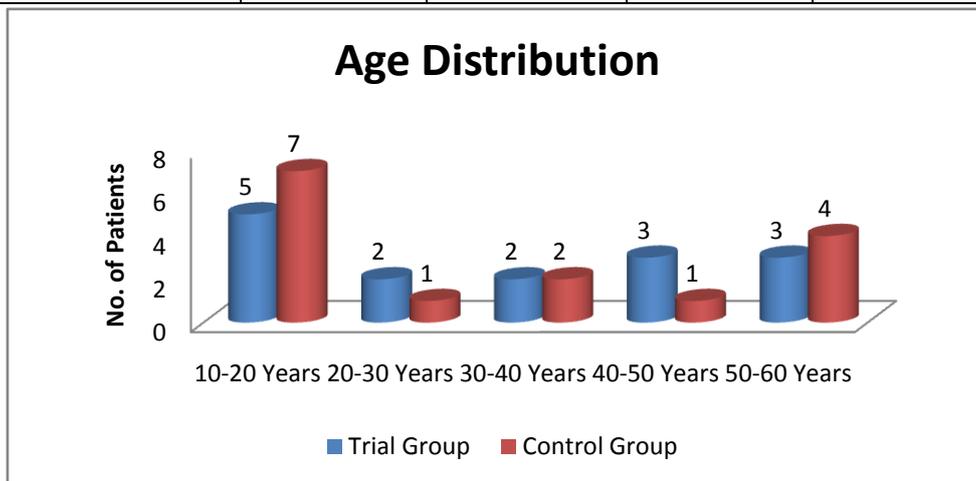
- 0 : Callus absent
- 1 : Callus present
- 2 : Healing of fracture

2. Tenderness: Elicited in accessible cases on first day, on 15th, 30th & 45th day.

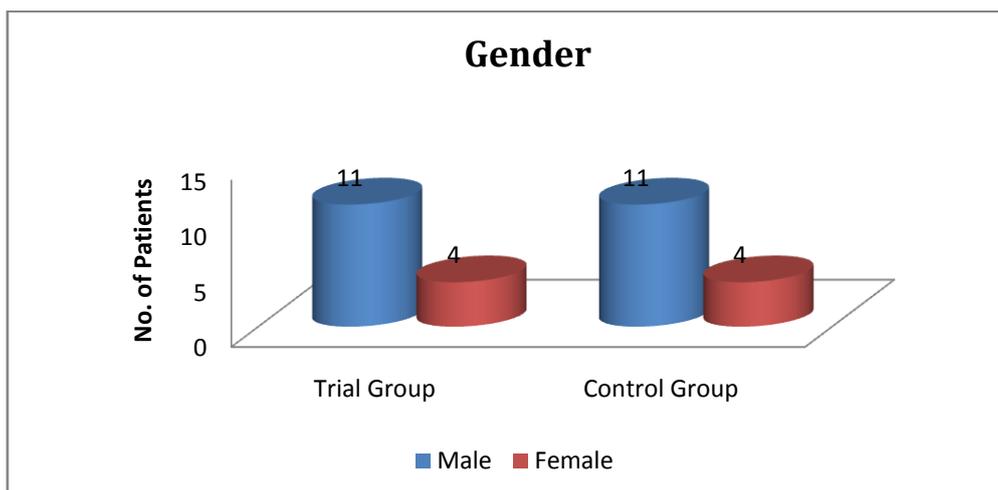
- 0 : No tenderness
- + : Mild tenderness

OBSERVATIONS

Age Group	Trial Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
10-20 Years	5	33.3	7	46.7
20-30 Years	2	13.3	1	6.7
30-40 Years	2	13.3	2	13.3
40-50 Years	3	20.0	1	6.7
50-60 Years	3	20.0	4	26.7
TOTAL	15	100.0	15	100.0

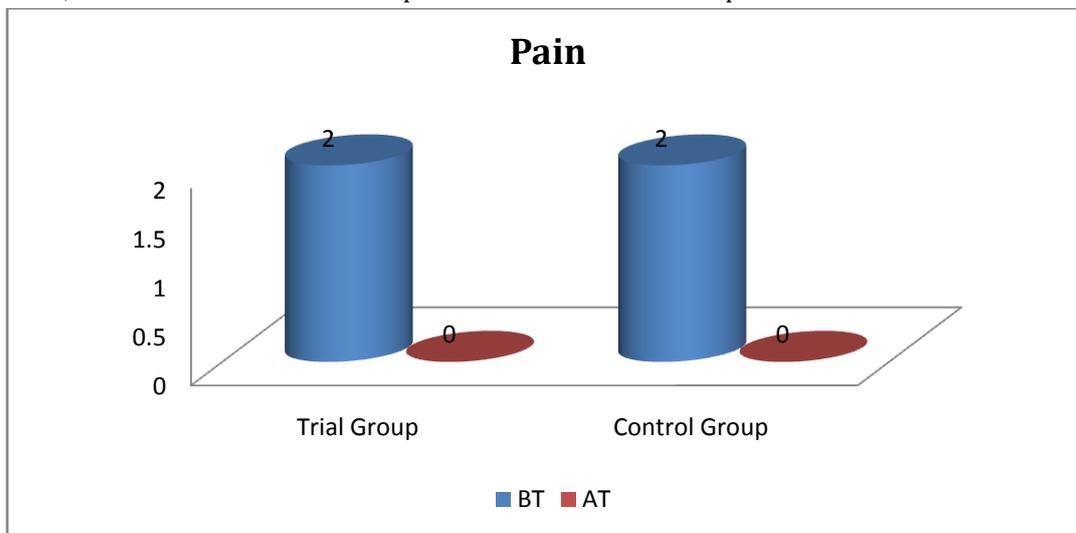


Gender	Trial Group		Control Group	
	Frequency	Percentage	Frequency	Percentage
Male	11	73.3	11	73.3
Female	4	26.7	4	26.7
TOTAL	15	100.0	15	100.0



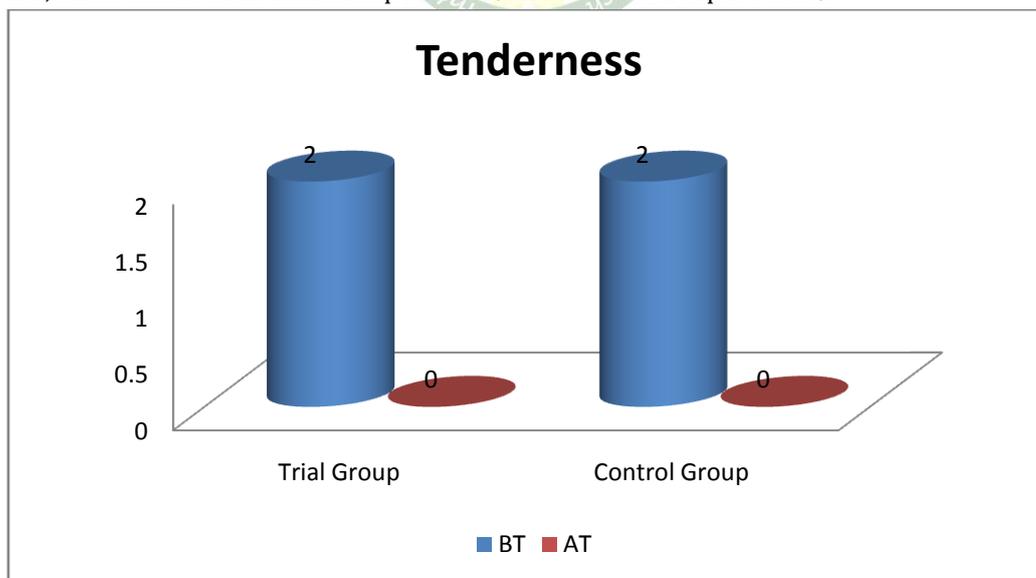
Pain	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Trial Group	2	0	-3.354 ^a	0.001	87.1	Significant
Control Group	2	0	-3.531 ^a	0.000	82.4	Significant

Since Observations are on ordinal scale, we have used Wilcoxon Signed Rank Test. From above table we can observe that P-Values for both the groups are less than 0.05 hence we conclude that effect observed in both the groups are significant. Further, effect observed in Trial Group is 87.1% and Control Group is 82.4%.



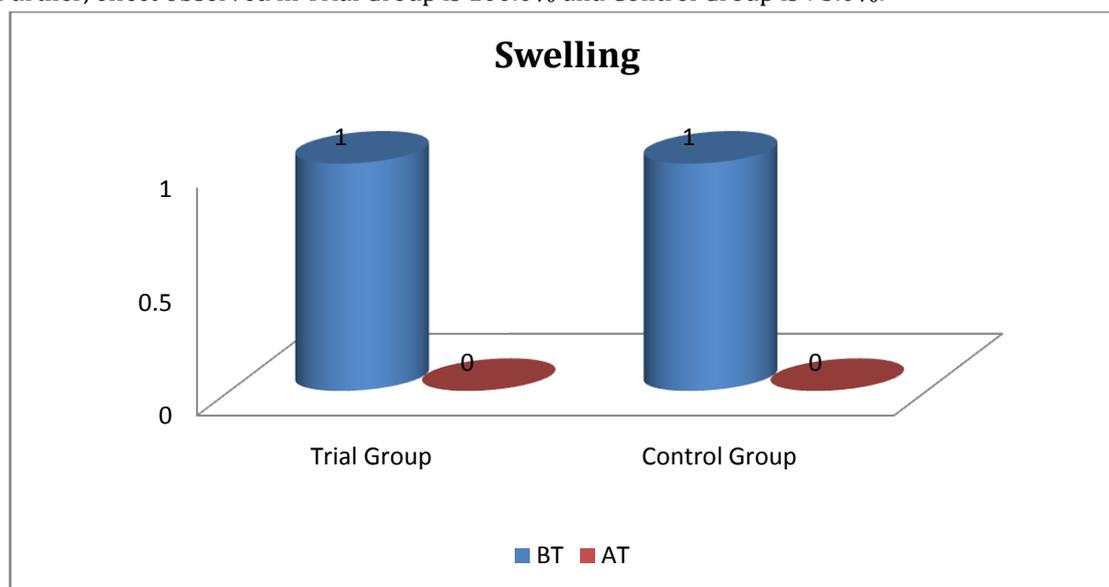
Tenderness	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Trial Group	2	0	-3.473 ^a	0.001	89.3	Significant
Control Group	2	0	-3.464 ^a	0.001	79.3	Significant

Since Observations are on ordinal scale, we have used Wilcoxon Signed Rank Test. From above table we can observe that P-Values for both the groups are less than 0.05 hence we conclude that effect observed in both the groups are significant. Further, effect observed in Trial Group is 89.3% and Control Group is 79.3%.



Swelling	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Trial Group	1	0	-2.762 ^a	0.006	100.0	Significant
Control Group	1	0	-2.762 ^a	0.006	75.0	Significant

Since Observations are on ordinal scale, we have used Wilcoxon Signed Rank Test. From above table we can observe that P-Values for both the groups are less than 0.05 hence we conclude that effect observed in both the groups are significant. Further, effect observed in Trial Group is 100.0% and Control Group is 75.0%.



Callus Formation	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
Trial Group	0	2	-3.358 ^b	0.001	87.0	Significant
Control Group	0	2	-3.286 ^b	0.001	100.0	Significant

Since Observations are on ordinal scale, we have used Wilcoxon Signed Rank Test. From above table we can observe that P-Values for both the groups are less than 0.05 hence we conclude that effect observed in both the groups are significant. Further, effect observed in Trial Group is 87.0% and Control Group is 100.0%.

- The clinical trial of *Arjun, Guggul, Laksha* in *Kanda bhagna* was carried out & it was found that the trial drugs *Arjun, Guggul* And *Laksha* are useful in reducing pain, swelling, tenderness, symptoms seen in fracture.
- However, the drug used for control group has shown a much better action with regards to callus formation.
- In either groups symptoms of pain, swelling tenderness have reduced significantly.

DISCUSSION

Age

- Maximum patients (33.3%) seen in trial group were of age group 10-20 years. Max. Patients (46.2%) seen in control group were of age group 10-20 years.
- The incidence of fractures being most common in this age group of 10-20 years because of their physical activity (playing) and due to their undeveloped bones.

Gender

- Maximum patients (73.3%) seen in trial group were of male gender.
- Maximum patients (73.3%) seen in control group were of male gender.
- The incidence of male gender being higher maybe due to their increase risk of being more prone to accidents.

Pain

- Significant reduction effect was observed in both groups. However, there was a 4.7% more better pain relief in trial group, since *Arjun, Guggul* and *Laksha* are known to be having analgesic & anti-inflammatory action. *Guggul* is a potent *Shothhara*.

Tenderness

- Significant reduction in tenderness was seen in both the groups but 10% more effect was seen in trial group. Since, *Guggul* helps in relieving *Shotha* & does *Lekhan karma*, *Arjun* helps in *Pittahara karma*.

Swelling

- Significant reduction is seen in swelling in both the groups but, 25% more significant result was seen in trial group this may be due to potent *Shothhara, Lekhan karma* of *Guggul*. Modern research has proven that *Guggul* is a good anti-inflammatory agent.

Callus Formation

- Significant effect was seen on callus formation in both the groups. 13% more effect was seen in control group.
- Calcitrol promotes calcium absorption in the intestine & retention at the kidneys thus increasing serum calcium levels. It also increases renal tubule phosphate resorption consequently decreasing serum phosphatase levels, PTH levels and bone resorption. Hence promoting a faster callus formation.
- 87% effect was seen in trial reason being *Arjun* contains calcium which helped in the callus formation. *Laksha* helped in *Sandhan* (i.e., binding of the two broken edges of the bone).

- *Guggul* helps as *Rasayan* & hence helped in promoting callus formation

RESULT

The clinical trial of *Arjun, Guggul, Laksha* in *Kanda bhagna* was carried out & it was found that the trial drugs *Arjun, Guggul* and *Laksha* are useful in reducing pain, swelling, tenderness, symptoms seen in fracture.

However, the drug used for control group has shown a much better action with regards to callus formation.

In either groups symptoms of pain, swelling tenderness have reduced significantly.

CONCLUSION

The clinical trial of *Arjun, Laksha Guggul* was carried out & it can be concluded that the evaluation of trial drugs *Arjun, Guggul, Laksha* is effective in reducing pain, swelling, and tenderness symptoms seen in fracture as compared to control group & also helps in callus formation.

But the drug *Gemcal* used in control group has shown a highly potent action in callus formation.

Topic of *Kanda bhagna* & fracture has been studied from different texts in detail along with its Ayurvedic aspects from various *Samhitas* and a detailed study of *Arjun, Guggul* and *Laksha* & *Gemcal* was carried out

Scope for Further Study

A further study needs to be carried out wherein a larger sample size needs to be considered for the same. Also various types of fractures need to be undertaken for such type of study. An Ayurvedic drug regimen needs to be researched upon and verified and then established to enhance the healing process after occurrence of fracture. Also, the regimen may be such that it will simultaneously reduce the other deleterious effects of fracture on the body during recuperation period.

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*Address for correspondence

Dr Sushant Jagdale

P.G. Scholar

Bharati Vidyapeeth Deemed

University College and Hospital of

Ayurveda, Katraj-Dhankawadi,

Pune-411043

Mobile: 09561731366

Email: sushant.jagdale27@gmail.com