wjpmr, 2025, 11(2), 215-221

SJIF Impact Factor: 6.842

WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.wjpmr.com

Research Article

ISSN 2455-3301

WJPMR

CLINICAL EFFICACY OF GOODCARE CALCI GUARD FOR BONE AND JOINT HEALTH: HUMAN SCIENTIFIC TRIAL

***[1]Dr. Ranjan Kr Kalita, [2]Prof (Dr.) Pranabjyoti Baishya, [3]Dr. Aman Kumar**

[1]Assistant Professor, Dept. of Kayachikitsa, Govt. Ayurvedic College and Hospital, Guwahati, Assam.
[2]Principal i/c Cum Professor, Govt. Ayurvedic College and Hospital, Guwahati, Assam. Dean, Faculty of Ayurveda, Srimanta Sankaradeva University of Health Science, Guwahati, Assam.
[3]1st Year PG Scholar, Dept. of Kayachikitsa, Govt. Ayurvedic College and Hospital, Guwahati, Assam.

***Corresponding Author: Dr. Ranjan Kr Kalita**

Assistant Professor, Dept. of Kayachikitsa, Govt. Ayurvedic College and Hospital, Guwahati, Assam.

Article Received on 04/12/2024 **Article Revised on 25/12/2024** **Article Accepted on 15/01/2025**

ABSTRACT

Calcium plays a crucial role in bone health, and a deficiency in calcium can lead to various skeletal issues, including joint problems. Ayurveda has the potential in managing Sandhigata vata (Osteoarthritis) and other calcium deficiency related joint problem with its unique comprehensive and holistic approach. In this Human scientific trial, 50 patients who were suffering from osteoarthritis or other calcium deficiency related joint disorders were selected randomly to assess the efficacy of Goodcare Calci guard, an ayurvedic proprietary herbal medicine for bone and joint health. At the end of the trial, Goodcare Calci guard had shown statistically significant results. Thus, it can be concluded that Goodcare Calci guard is effective in managing bone and joint related issues.

KEYWORD: Sandhigata Vata (Osteoarthritis), Goodcare, Calci guard, Human scientific Trial, Statistically Significant.

1. INTRODUCTION

In Ayurveda, bone and joint health is seen as an important aspect of overall well-being, and maintaining their strength and flexibility is integral to a balanced body. Ayurveda considers a holistic approach, emphasizing diet, lifestyle, herbal remedies, and therapies tailored to an individual's constitution (Prakriti), doshic imbalances, and the root cause of bone or joint problems.

Ashthishaya refers to bone health and the disorders that arise from imbalances, particularly the weakening or degeneration of the bones due to factors like aging, nutritional deficiencies, or trauma. Treatment focuses on nourishing the bones with herbal remedies, diet, and therapeutic practices that balance the Vata dosha and support the regeneration of the skeletal tissues.

Sandhigata Vata is a condition described in Ayurveda that refers to the vata dosha being imbalanced, which leads to the degeneration and dysfunction of the joints (sandi). This condition is often associated with symptoms similar to osteoarthritis in modern medicine. The word *"sandhigata"* refers to the joints, and *"vata"* refers to the biological energy responsible for movement and regulation of bodily functions.

Recognizing the potential of Ayurvedic remedies in addressing common fitness concerns, we endorse to conduct a human scientific trial at the Government Ayurvedic College and Hospital in Guwahati. This trial targets to assess the protection and efficacy of Goodcare Calci Guard, inside the control of bone and joint health.

2. LITERATURE REVIEW

A. DISEASE REVIEW

a) Ayurvedic Review

"Sandhigata Vata" is a specific condition that occurs when the Vata dosha becomes aggravated in the joints (Sandhi meaning joint, and Gata meaning affected or located in). This condition involves the accumulation and imbalance of Vata in the joints, leading to pain, stiffness, and functional limitations. It is one of the common Vata-related disorders and is often compared to osteoarthritis.

Vata dosha governs movement, and when Vata accumulates or becomes imbalanced in the joints, it causes a disruption in the smooth movement of the bones and tissues. This can lead to the drying up of the synovial fluid that lubricates the joints, causing friction between the bones and leading to symptoms like pain, stiffness, and inflammation.[1,2]

b) Modern Review

Osteoarthritis (OA) is a common form of arthritis characterized by the gradual breakdown of the cartilage that cushions the joints. This leads to pain, swelling, stiffness, and decreased flexibility in the affected joints. It is primarily a degenerative condition and is most common in weight-bearing joints like the knees, hips and spine.

The goals of the treatment of OA are to alleviate pain and minimize loss of physical function. To the extent that pain and loss of function are consequences of inflammation, of weakness across the joint, and of laxity and instability, the treatment of OA involves addressing each of these impairments. Comprehensive therapy consists of a multimodality approach including non-pharmacologic and pharmacologic elements. Patients with mild and intermittent symptoms may need only reassurance or non-pharmacologic treatments. Patients with ongoing, disabling pain are likely to need both non-pharmacotherapy and pharmacotherapy.[3]

B. DRUG REVIEW

Table 1: Product Specification.

Brand	Goodcare Pharma Pvt Ltd
Item Weight	500mg
Product Benefits	Bone and joint health
Age Range (Description)	Adult
Package Type	Bottle
Dosage Form	Tablets
Dose	2 Tab BD PC
Model Name	Calci Guard
Manufacturer	Goodcare Pharma Pvt Ltd
Country of Origin	India

Table 2: Ingredients and their mode of action.[4,5,6,7,8,9]

S NO.	Ingredient	Quantity (Mg)	Effect on Dosha	Chemical constituents	Pharmacological actions
01.	**Arjuna (Terminalia arjuna) (Stem Bark)**	5	Balance Kapha and Pitta	1. **Phenolic Compounds**: terminic acid and arjunolic acid. 2. **Glycosides**: arjunetin and arjunosides I-IV 3. **Flavones** 4**. Tannins** 5**. Oligomeric Proanthocyanidins**	Cardioprotective Antiarrhythmic Cardiac Stimulant Antianginal Anti-osteoporotic Anti-herpes virus (it is found in Casuarinin hydrolysable tannin compound in Arjuna bark) Wound healing Anti-arthritic Anti-inflammatory Antacid Anti-ulcerogenic etc.
02.	**Shallaki (Boswelia Serrata) (Resin)**	10	Balance Kapha and Pitta	1. **Terpenoids:** pentacyclic triterpenes and tetracyclic triterpenes 2. **The bosewellic acids**	Anti-arthritic and Anti-inflammatory Activity Antifungal Activity Antidiarrheal Activity Antidepressant Activity Anti-asthmatic Activity Hypoglycaemic Activity etc.
03.	**Hadjod (Cissus quadrangularis) (Stem)**	200	Balances Vata and Kapha	1. **Steroids**: Ketosteroids, Oxosteroids 2. **Stilbene derivatives**: Quadrangularins A, B and C, resveratrol, piceatannol, pallidol, perthenocissin, α- and β amyrins and α-	Bone healing activity Antioxidant and free radical scavenging activity Gastroprotective and antiulcer activity Analgesic, anti-inflammatory and antipyretic activity Cox Inhibition Antimicrobial activity Antihyperglycemic activity Antiarthritic activity

				amyrone	Anti-osteoporosis activity Central nervous system depressant and anxiolytic activity etc.
04.	**Shankha Bhasma**	50	Balances Vata and Pitta	Calcium Carbonate	Source of calcium Effective in ailments like hyperacidity, GERD, ulcerative colitis, depilation etc.
05.	**Praval Pishti**	50	Balance all three Dosha	-	Anti-inflammatory Antiarthritic activity Antacid properties etc.
06.	**Akik Pishti**	25	Predominantly Pitta Dosha	-	Alleviate symptoms associated with heat-related conditions like hot flashes, excessive sweating, and inflammation etc.
07.	**Kukkutandatwak Bhasma**	50	-	-	Useful in Leucorrhoea, Bleeding disorder, Diabetes, Cardiac Disorder, Disorder of brain etc.
08.	**Mukta Pishti**	25	Balances Rakta and pitta	-	Useful in ailments like anxiety, gastritis etc Anti-hypertensive.
09.	**Giloy Satva**	10	Balance all three Dosha	1.**Glycosides:** Tinocordifolioside, Tinocordiside, Cordifoliside A, B, C, D & E, Cordioside 2.**Alkaloids**: Berberine, Palmatine	Anti-diabetic Anti-Inflammatory Antioxidant Immunomodulatory Anti-cancerous Anti-microbial Anti-allergic etc.

3. MATERIAL AND METHODOLOGY

3.1 Subject Area: Orthopaedics.

3.2 Source of Data: Subjects with Bone and joint health related issues are selected from the OPD, IPD of Government Ayurvedic College & Hospital, Assam.

3.3 Study Design: The study involves a single-arm trial where all subjects were administered Goodcare Calci guard as part of the intervention. Measures was taken to minimize any potential bias during the evaluation of treatment outcomes.

Table 3.

Aspect	Goodcare Calci Guard
Study Duration	6 months
Trial duration	3 months
Follow up duration	3 months
Drug Dosage	2 tablets (500mg) BD
Patient Population	50 patients
Study Design	Randomized Control Trial (RCT)
Outcome Measures	Improvement in symptoms related to calcium deficiency, bone and joint pain.

3.4 Selection Criteria

3.4.1 INCLUSION CRITERIA

- Patients having classical features of sandhigata vata (Osteoarthritis) and joint related disorders due to calcium deficiency, presenting with the symptoms of
  - Vaat purna driti Sparsha (sound resembling that made when rub against a balloon or transparent container filled with air),
  - Shotha (swelling),
  - Prasarana akunchanyohopravritti savedana (painful movement of the joint including extension and flexion),
  - Atopa (Crepitus)
  - Katishool (Pain in the low back area)
- Patients above 18 years and below 70 years of age.
- Patient willing to participate in the study.

3.4.2 EXCLUSION CRITERIA

- Age below 18 years and above 70 years.
- Pregnant and lactating women.
- Already diagnosed Patients with major systemic illness including cardiac diseases, hepatobiliary disease, kidney disease, Cancer Patients, Pott's Spine etc.
- Individuals with recognised allergies to product's ingredients.

3.5 Assessment Criteria

Subjective Criteria (Table 4)[10]

Features	Gradation	Parameters
Pain	**0**	No Pain
	1	Mild pain (exaggerated by movement and subside by rest of joint)
	2	Moderate pain (not relieved by rest but not disturbing sleep or other routine activities)
	3	Severe pain (disturbing sleep and other routine activities and relieved by analgesic)
Tenderness	**0**	No tenderness
	1	Mild tenderness (patients complains of pain with swelling at knee)
	2	Moderate tenderness (patient complains of pain and on touch withdraw knee joint)
	3	Severe tenderness (patient does not allow to touch the knee joint)
Crepitation	**0**	No crepitus
	1	Palpable crepitus
	2	Audible crepitus

Objective Criteria

Bone Density Test

3.6 Interventions

Standards for terminating and changing assigned interferences

- Patients are allowed to withdrawn during the study if somewhat inconvenient occurs, medication sensitivity or any supplementary illness or problem rises.
- Rescue medication: if any untoward situation arises patients are allowed to take treatment of his/her choice.

3.7 Outcome Measures

- Primary outcome measures consist of the reduced in symptoms of joint and bone disorders.
- Secondary final results measures consist of the occurrence of unfavourable occasions and modifications in biochemical markers related to the conditions.

3.8 Safety and Adverse Events Monitoring

No Adverse Effect of the trial drugs was observed during the trial clinically.

4. OBSERVATION AND RESULT

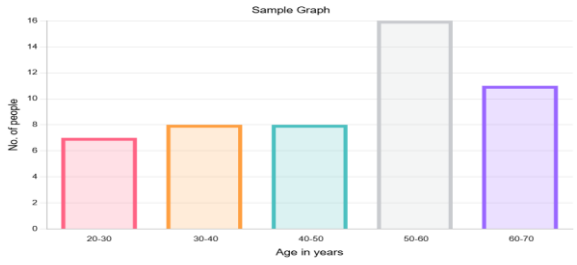
- Total number of patients enrolled in the trial = 64
- Drop Out Patient in the trial = 14
- Total number of patients completed the trial=50

In this study, clinical trial was conducted on 50 patients having bone and joint related problem especially osteoarthritis fulfilling the inclusive and exclusive criteria. The patients were randomly selected. Subjective and objective parameters of patients was noted before the treatment and after treatment, Subjective parameter is converted to grading scale. For statistical analysis Pair T-test was applied at $p< 0.05$. The results of assessment of efficacy of Goodcare Calci guard for bone and joint health are presented here.

Demographic Profile

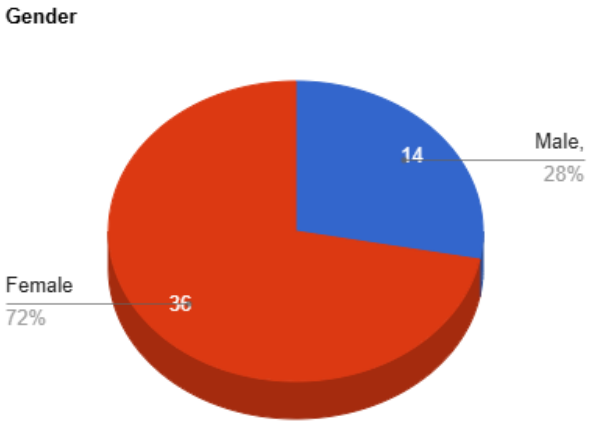
Age Wise (Table 5)

Age(years)	No. of Patient	% of patients
20-30	07	14%
30-40	08	16%
40-50	08	16%
50-60	16	32%
60-70	11	22%



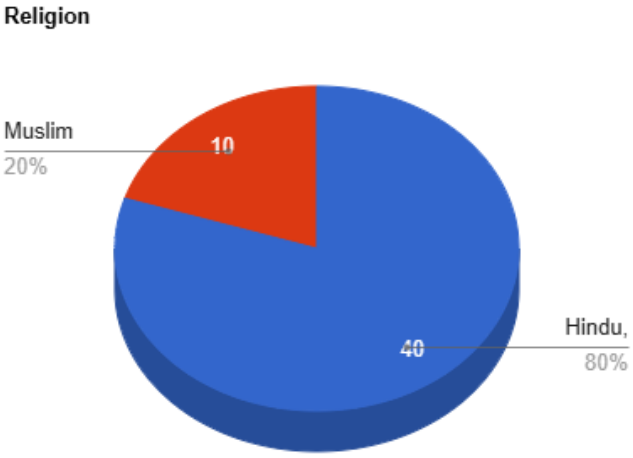
Gender Wise (Table 6).

Gender	Number	Percentage
Male	14	28%
Female	36	72%



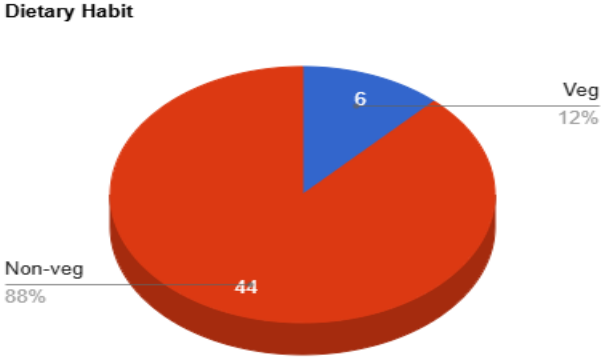
Religion Wise (Table 7)

Religion	Number of people	Percentage
Hindu	40	80%
Muslim	10	20%



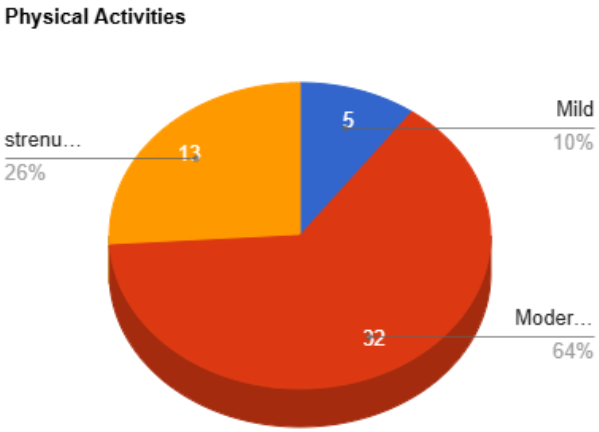
Diet Wise (Table 8)

Diet	No. of People	Percentage
Veg	06	12
Non-Veg	44	88



Physical Activities (Table 9)

Activity	No. of People	Percentage
Mild	05	10
Moderate	32	64
Strenuous	13	26



RESULT

Pain (Table 10)

Group	BT (Before Treatment)	F1 (Follow up 1)	F2 (Follow up 2)	AT (After Treatment)
Mean	2.14	1.88	1.34	1.04
SD	0.83	0.87	1.02	0.70
SEM	0.12	0.12	0.14	0.10
P value		<0.0001	<0.0001	<0.0001
SED		0.063	0.121	0.065
T value		4.1492	6.5997	16.8028
Result		**statistically significant.**	**statistically significant.**	**statistically significant.**

Tenderness (Table 11)

Group	BT (Before Treatment)	F1 (Follow up 1)	F2 (Follow up 2)	AT (After Treatment)
Mean	1.08	0.88	0.78	0.42
SD	0.44	0.44	0.42	0.50
SEM	0.06	0.06	0.06	0.07
P value		0.001	0.0001	0.0001
SED		0.057	0.071	0.073
T value		3.500	4.200	8.9849
Result		**statistically significant.**	**extremely statistically significant.**	**extremely statistically significant.**

Crepitation (Table 12)

Group	BT (Before Treatment)	F1 (Follow up 1)	F2 (Follow up 2)	AT (After Treatment)
Mean	0.98	0.80	0.70	0.68
SD	0.59	0.49	0.46	0.47
SEM	0.08	0.07	0.07	0.07
P value		0.0019	<0.0001	<0.0001
SED		0.055	0.064	0.065
T value		3.2796	4.3653	4.5826
Result		**statistically significant**	**extremely statistically**	**extremely statistically**

			significant.	**significant**

Bone Density Test (T Score) (Table 13)

Group	BT (Before Treatment)	AT (After Treatment)
Mean	-1.6190	-1.4286
SD	0.5053	0.4436
SEM	0.0715	0.0627
P value		0.0001
SED		0.020
T value		9.6037
Result		extremely statistically significant

5. DISCUSSION

Drug Discussion: Goodcare Calci guard, a herbal Formulation containing nine ingredients is proven to be very effective in bone and joint health. Among them Hadjod (Cissus quadrangularis) play a vital role in bhagna sandhankara (heal fractures) and its Balya (Strength) guna improve the overall strength of the body. Shankha Bhasma, Mukta pishti, Akik Pishti, Praval pishti and Kukkundanda bhasma are good sources of calcium and increases the bone density, Guduchi satva help in rejuvenating the body as a whole, Arjuna (Terminalia arjuna) is having cardioprotective properties as well as wound healing properties. Therefore, Goodcare Calci guard gave satisfactory results in the clinical trial performed on 50 patients.

DISCUSSION ON RESULT

In this study 50 patients having classical feature of sandhigata vata and joint related problem were randomly selected from GAC&H Kayachikitsa OPD and IPD. more female patient than male come to the OPD/IPD with complain of bone and joint related issue. Paired T-test was done for the statistical analyses and it shows very significant result on both the subjective and objective parameters. Hence Goodcare Calci guard is effective in the treatment of bone and joint health related problem.

6. CONCLUSION

Goodcare Calci guard has shown a promising result in control of sandhigata vata, bone and joint related issue. However, a greater number of sample size is required to establish its clinical efficacy, though this study proves that the Goodcare Calci guard is effective in managing bone and joint related issues.

7. REFERENCES

1. Agnivesha, Dridhabala Charak Samhita- Vidyotani Hindi commentary by Kashinath shastri and Pandit Gorakha nath chaturvedi, Part – 2, Chaukhambha Bharati academy, Varanasi 2015, chapter chikitsa sthana 28/37, page No.– 783.
2. Susruta Samhita of Maharshi Susruta Edited with Ayurveda Tattva Sandipika by Kaviraj Ambikadutta Shastri part 1 Nidan Sthan Chapter1/28, Page No. 298.
3. Davidson's Principles and practice of medicine 23rd by Stuart H. Ralstan, Ian D. Penman, Mark W.J. Strachan, Richard P. Hobson Page no.2629.
4. Dr. Vijay Bhushan Sharma, Dr. Manish Kumar Soni, Dr. Jagdish Mohan Onkar and Dr. Omprakash Sharma; MEDICINAL USES OF ARJUNA (Terminalia arjuna Roxb.): A REVIEW ARTICLE; WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH, 2019; 5(8): 87-88; ISSN; 2455-3301.
5. Puneet Chauhan, Saurabh Singh, Shekher Chauhan, Dileep S. Baghel, Kamal Kumar; An Overview on "Boswellia serrata"; Asian Pacific Journal of Health Sciences, (Special); 2021; 8(4): ISSN; 2350-0964.
6. Mamta Tiwari, Pushpraj S. Gupta, Nisha Sharma: Ethnopharmacological, Phytochemical and Pharmacological review of Plant Cissus quadrangularis L.; Research Journal of Pharmacognosy and Phytochemistry, 2018; 10(1): 81-90; ISSN;0975-4385.
7. Agrawal Sachin, Prasad Anjali Baijnath, Baheti Sandip R., Dongre Dipti A, Tomar Rinku; PHARMACEUTICAL CHARACTERIZATION & PHARMACOLOGICAL CONSIDERATION OF SHANKHA BHASMA: AN AYURVEDIC FORMULATION; INTERNATIONAL AYURVEDIC MEDICAL JOURNAL, April – 2020; 8(4): 2320 5091.
8. Abhishek Gupta, Priyanka Gupta, Gunjan Bajpai; Tinospora cordifolia (Giloy); An insight on the multifarious pharmacological paradigms of a most promising medicinal ayurvedic herb; PMID: 38390130.
9. Dr. Deepak Singla and Dr. Ruhi Gupta: A REVIEW ON KUKKUTANDA TWAK BHASMA; WORLD JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH, 2022; 8(4): ISSN; 2455-3301.
10. Nilesh G Jethava, Tukaram S Dudhamal, Sanjay Kumar Gupta; Role of Agnikarma in Sandhigata Vata (osteoarthritis of knee joint); An International Quarterly Journal of Research in Ayurveda, /Jan-March 2015; 36(1): ISSN; 0974-8520.