



ISSN (E): 2277-7695  
ISSN (P): 2349-8242  
NAAS Rating: 5.23  
TPI 2023; SP-12(9): 2458-2460  
© 2023 TPI  
[www.thepharmajournal.com](http://www.thepharmajournal.com)  
Received: 25-07-2023  
Accepted: 28-08-2023

#### Bhavitha D

M.V.SC Scholar, Department of Veterinary Medicine, PVNRTVU, College of Veterinary Science, Rajendranagar, Hyderabad, Telangana, India

#### Ambica G

Assistant Professor, Department of Veterinary Medicine, PVNRTVU, College of Veterinary Science, Rajendranagar, Hyderabad, Telangana, India

#### Lakshmi K

Associate Professor, Department of Veterinary Medicine, PVNRTVU, College of Veterinary Science, Korutla, Telangana, India

#### Chandrashekar EL

Professor and Univ Head, Department of Veterinary Surgery and Radiology, PVNRTVU, College of Veterinary Science, Rajendranagar, Hyderabad, Telangana, India

#### Satish Kumar K

Professor and Univ Head, Department of Veterinary Medicine, PVNRTVU, College of Veterinary Science, Rajendranagar, Hyderabad, Telangana, India

#### Corresponding Author:

#### Bhavitha D

M.V.SC Scholar, Department of Veterinary Medicine, PVNRTVU, College of Veterinary Science, Rajendranagar, Hyderabad, Telangana, India

## Effectiveness of Ashwagandha along with application of tens in management of osteoarthritis in geriatric dogs

**Bhavitha D, Ambica G, Lakshmi K, Chandrashekar EL and Satish Kumar K**

#### Abstract

The present study was carried out in the geriatric dogs with severe osteoarthritis to know the efficacy of physiotherapy techniques in management of osteoarthritis over the conventional therapy. For this, a total of 20 dogs were selected having the signs of lameness, unable to bear weight and subjected to various diagnostic procedures like Radiography, Ultrasound and CT scan. Further confirming the cases as Osteoarthritis, 10 dogs were treated by using physiotherapy techniques; Diathermy and TENS (trans electric nerve stimulus) and remaining 10 dogs were treated by NSAIDs and other joint supplements and the results were compared in terms of side effects, pain management and weight bearing.

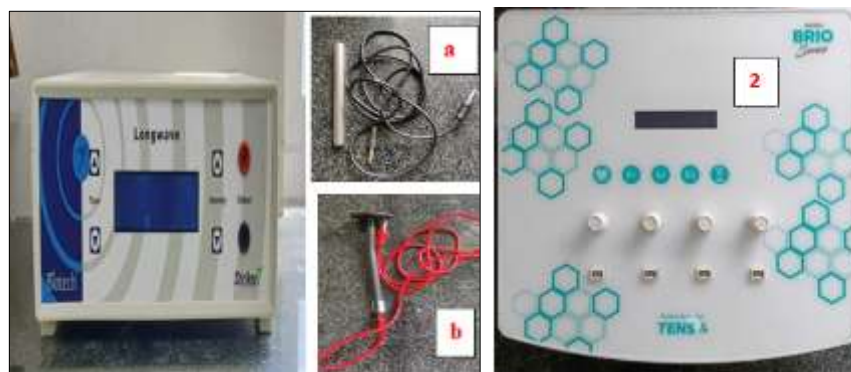
**Keywords:** Diathermy, geriatric dogs, joint supplements, NSAIDs and TENS

#### Introduction

Osteoarthritis (OA) is a prominent disorder among the several geriatric diseases and accounts for up to 20% of older dogs chronic discomfort, with middle-aged and older dogs being more susceptible (Bland, 2015) [3]. Incomplete treatment of osteoarthritis can prevent pets from fully partaking in daily activities like walking, running and swimming, which can result in long-lasting damage to the affected joint (Ranganath, 2012) [7]. Osteoarthritis is frequently treated using a multimodal approach that may involve activity restriction, weight control, nutritional support, physical therapy, the use of non-steroidal anti-inflammatory drugs, analgesic medications and nutraceuticals (Aragon *et al.*, 2007) [1]. Physiotherapy is a rapidly evolving field in medical science which is widely used to treat several orthopaedic issues like osteoarthritis.

#### Materials and Methods

All the 20 dogs suffering with osteoarthritis were selected and divided into 2 groups with 10 in each. Group A: Ten dogs were administered with Inj. Prednisolone @ 0.5-1.0 mg/kg for 5 days followed by diathermy @ twice a week for 4 weeks and commercially available nutraceuticals like Lubrihans @ 1 tablet/10 kg body weight for a period of 30 days. Group B: Ten dogs were administered with Carprofen @ 2.2-4.4 mg/kg for 5 days followed by TENS @ twice a week for 4 weeks and Ashwagandha @ 500-1000 mg/kg for a period of 30 days.



**Fig 1 & 2:** Long wave diathermy a) earth probe b) treatment probe 2. TENS (Trans cutaneous Electrical Nerve Stimulator)

## Results and Discussion

In the current study, among the clinical parameters, there is significant improvement in weight bearing in group I and group II dogs after therapy. Group II dogs, in which TENS is applied (Fig.2) showed more response in clinical parameters, which is in accordance with the study conducted by Johnson *et al.* (2020) [4], who reported more response in weight bearing with TENS compared to other physical rehabilitation techniques. Similarly, Riley *et al.* (2022) [8]. In the present study, the therapy resulted in considerable improvements in joint mobility in both groups I and II. Whereas, group II dogs treated which received Carprofen, Ashwagandha and TENS showed much improvement in joint motion by day 30 than group I dogs and is in accordance with the findings of Berte *et al.* (2012) [2], who reported significant improvement in dogs underwent TENS than diathermy (Fig.3).



**Fig 3:** Application of Diathermy in osteoarthritis affected dog



**Fig 4:** Application of TENS in osteoarthritis affected Dog

In the present study, the therapy resulted in considerable improvements in joint mobility in both groups I and II. Whereas, group II dogs treated which received Carprofen, Ashwagandha and TENS showed much improvement in joint motion by day 30 than group I dogs and is in accordance with the findings of Berte *et al.* (2012) [2], who reported significant improvement in dogs underwent TENS than diathermy (Fig.3). Similarly, Krutika *et al.*, 2016 [6] reported more improvement in Ashwagandha received group by day 30 compared to steroid treated group.

In the present study, significant difference in pain scores is seen in both group I and group II. However, group II showed more improvement than group I by day 30, which is in accordance with Krutika *et al.* (2016) [6], where they discussed that the most prominent Withanolides extracted from the leaves and dried roots of *Withania somnifera* is Withaferin A, a steroidal lactone, a physiologically active steroid, has been linked to anti-inflammatory action and this activity of Withaferin A is comparable to that of sodium succinate hydrocortisone helping in relieving the pain associated with OA. King (2018) [5] reported that transcutaneous electrical stimulation (TENS) could be used to relieve pain through the stimulation of sensory nerve fibres and this procedure is conducted through the stimulation of either of two pain channels, the pain gate mechanism or the endogenous opioid mechanism by electrode placement attached to the skin.

There was a significant reduction in lameness score in both the groups after the therapy. Among the two groups, Group II showed higher significance than Group I, which is in consistence with the findings of Sharma *et al.* (2020) [9] who documented that Ashwagandha had good relief effect compared to NSAIDs with least side effects and similarly Kirkby Shaw *et al.*, 2019 stated that TENS provide greater relief in pain and disability among all the physical rehabilitation techniques.

**Group II dogs showed overall good response in pain, weight and lameness scores (fig.5) than group 1 dogs (fig.6.)**



**Fig 5:** Group 11 dog showing better improvement in weight bearing



**Fig 6:** Group 1 dog showing less improvement in weight bearing

## Conclusion

Among the physical rehabilitation techniques, TENS showed good response in terms of relieving pain, weight bearing and procedure is with less stress, compare to diathermy which is having certain adverse effects like skin burns and causes stress on dog during procedure. TENS can be recommended in severely affected OA as a part of routine physical rehabilitation technique in aged dogs and should be done atleast twice a day for minimum of 4 weeks to achieve good response. As osteoarthritis in geriatric dogs requires lifelong therapy, Ashwagandha along with TENS could be recommended to relieve pain with least or no adverse effects.

## Acknowledgement

Author expresses her sincere gratitude to all the staff of Department of Veterinary medicine and students of College of Veterinary Science, Rajendranagar for helping for successful completion of work.

## References

1. Aragon CL, Hofmeister EH, Budsberg SC. Systematic Review of Clinical Trials of Treatments for Osteoarthritis in Dogs. *Journal of the American Veterinary Medical Association*. 2007;230(4):514-521.
2. Berte L, Mazzanti A, Salbego FZ, Beckmann DV, Santos RP, Polidoro D, *et al*. Immediate physical therapy in dogs with rupture of the cranial cruciate ligament submitted to extracapsular surgical stabilization. *Arquivo Brasileiro de Medicina Veterinaria e Zootecnia*. 2012;64(1):01-08.
3. Bland SD. Canine Osteoarthritis and Treatments: A Review. *Veterinary Science Development*. 2015;5(2):84-89.
4. Johnson KA, Lee AH, Swanson KS. Nutrition and Nutraceuticals in the changing management of osteoarthritis for Dogs and Cats. *Journal of the American Veterinary Medical Association*. 2020;256(12):1335-1341.
5. King M. Use of Electrophysical agents (Epas) in Small Animal Veterinary Practice. *Companion Animal*. 2018;23(10):585-591.
6. Krutika J, Tavhare S, Panara K, Kumar P, Karra N. Studies of ashwagandha (*Withania somnifera* dunal). *International Journal of Pharmaceutical and Biological science Archive*. 2016;7(1):1-11.
7. Ranganath L. Arthritis in Dogs. 4<sup>th</sup> National Symposium on Companion Animal Practice; c2012. p. 129-139.
8. Riley LM, Satchell L, Stilwell LM, Lenton NS. Effect of massage therapy on pain and quality of life in dogs: A cross sectional study. *Veterinary Record*. 2021;189(11):1-10.
9. Sharma R, Chauhan A, Chaudhary P. *Withania Somnifera*: Therapeutic Uses and Phytochemical Constituents. *International Medico-Legal Reporter Journal*. 2020;3(1):72-77.
10. Shaw KK, *et al*. Fundamental principles of rehabilitation and musculoskeletal tissue healing. *Veterinary Surgery*, 2019 July;49(1):22-32.