Scientific Works. Series C. Veterinary Medicine. Vol. LXXI (1), 2025
ISSN 2065-1295; ISSN 2343-9394 (CD-ROM); ISSN 2067-3663 (Online); ISSN-L 2065-1295

STUDY ON THE EFFICACY OF PHYTOTHERAPY IN THE TREATMENT OF ARTHROSIS IN FIVE DOGS

Cristina FERNOAGĂ[1], Raluca Mihaela TURBATU[1*], Alexandru Gabriel NEAGU[1], Marius-Mihai BĂDULESCU[1], Niculae TUDOR[1]

[1]University of Agronomic Sciences and Veterinary Medicine of Bucharest, Faculty of Veterinary Medicine, 105 Splaiul Independentei, 5th District, 050097, Bucharest, Romania

*Corresponding author email: raluca.tbt@gmail.com

Abstract

Phytotherapy is a branch of alternative medicine, based on the healing properties of plants, which humans have used since ancient times. Considering the reduced risks of the bioactive compounds in botanical sources, the introduction of this therapy became of interest to veterinary medicine, especially in correlation with chronic pathologies. This is particularly relevant for managing chronic conditions where long-term pharmacological treatments often lead to adverse reactions. Arthrosis, a degenerative joint disease, is characterized by the progressive degradation of articular cartilage, accompanied by inflammatory processes and resultant pain and treated with a protocol that includes the administration of non-steroidal anti-inflammatory drugs (NSAIDs), analgesics, and adjunctive joint protectors. The present study aims to investigate the efficacy of phytotherapy in five canine patients diagnosed with arthrosis, by introducing a supplement whose composition includes Nettle extract, Boswellia extract, Copper, Turmeric Extract, and Manganese. Before and following the cessation of conventional therapy, each patient underwent a comprehensive pain scale assessment, alongside monitoring of relevant biochemical parameters, to ascertain the impact of the alternative treatment.

Key words*: phytotherapy, alternative medicine, arthrosis, pain management.*

INTRODUCTION

One of the most frequent arthropathies in humans and dogs, arthrosis, is defined as a complex degenerative syndrome, which includes a series of intrinsically interconnected lesions: cartilage degradation, new bone formation organized as osteophytes, and adjacent inflammation of periarticular tissues (Clark, 2015). The aetiology of this condition is multifactorial, but there are six risk factors more frequently attributed to the onset of the disease in scientific literature, respectively genetic factors and factors related to the patient's signalment (conformation, race, weight, age and hormonal status). Studies have shown that the highest chromosomal involvement occurs for hip dysplasia, breeds with a genetic predisposition (such as German Shepherd, Siberian Husky, Labrador retriever, Rottweiler) requiring close monitoring from an early age (Anderson et al., 2020; Beuing et al., 2000; Sallander et al., 2006). A disproportion of joint angles as well as overweight (sometimes occurred after sterilization) are also responsible for triggering degenerative lesions. It is known that arthrosis can evolve in two forms (primary and secondary), mainly affecting the shoulder, elbow, knee and pelvis joints. The process is a gradual one, which takes place in two phases - an inflammatory phase (with insidious evolution) and a destructive phase, in which chemical and mechanical aggression causes changes in the composition of the synovial fluid, leading to a difficult and very painful locomotion (Allegri et al., 2012; Clark, 2015), part of a vicious circle, as shown in Figure 1.

The suspicion diagnosis of arthrosis is established based on signalment data (age, sex, weight, race), in corroboration with the anamnesis and the results of the clinical examination which will highlight the presence of lameness, pain, crepitation and stiffness of the joint. The confirmation of the diagnosis requires the use of imaging techniques - radiography (with the three mandatory diagnostic criteria - the articular pinch, located in the area of maximum pressure, osteochondensation and the appearance of osteophytes) or arthroscopy (which allows direct visualization of intra-articular lesions), as well as arthrocentesis (Pettitt & German, 2015).

The treatment is multimodal, palliative and involves a classical approach and an alternative approach based on phytotherapy (Fox & Mills, 2010). The standard protocol includes the use of drug treatment (non-steroidal anti-inflammatory drugs (AINS) and chondroprotective) and non-drug treatment (obesity control, physical rehabilitation programs, diet rich in Omega 3) (Sallander et al., 2006).

Phytotherapy, part of the CAM (complementary and alternative medicine) concept, is used as an adjuvant therapy for chronic diseases in companion animals, allowing the reduction of doses for allopathic treatments and decreasing the risk of side effects associated with these therapies (Mills & Bone, 2000). Phytotherapy and complementary medicine are often subjects of debate, with some individuals remaining sceptical while others incorporate them into their daily routines (Poppenga, 2007).

The limited scientific evidence in the field of phytotherapy has led to doubt among clinicians regarding its effectiveness and safety. Additionally, existing studies often show results that are only slightly better than those of a placebo (Bone & Mills, 2013). However, in practical application, clinicians who use phytotherapy have observed genuinely positive outcomes. In certain cases, improvements are noted even when conventional treatments have been unsuccessful. It is essential to consider the patient's individual response to treatment, as reactions can vary. This personalized approach plays a crucial role in achieving successful phytotherapeutic treatment (Fox & Mills, 2000).

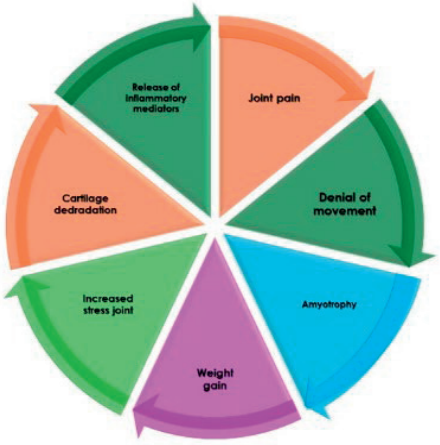

Figure 1. Arthrosis vicious cycle

MATERIALS AND METHODS

This study was carried out during the year 2023 at the University Veterinary Emergency Hospital "Prof. dr. Alin Bîrțoiu" and included five canine patients diagnosed with arthrosis, as shown in Table 1.

Table 1. Signalment data of the five patients included in the study

Species	Breed	Sex	Age (years)
CANINE	Mixed large breed	F	11
	Labrador retriever	M	11
	Bichon Maltese	F	10
	German Shepard	M	7
	Labrador Retriever	M	12

The treatment was carried out exclusively with Doloflamil, a product that contains as active ingredients nettle, curcuma, Boswellia, manganese and copper, for a minimum period of 21 days, the dose administered being 1 tablet per 5 kg. The non-inclusion criteria were - dogs on conventional anti-inflammatory and pain-relieving treatments (the phytotherapeutic product could only be administered 48 hours after stopping them), those diagnosed with polyarthrosis, septic arthritis or other differential diagnoses of arthrosis, and those with very severe pain (a score of more than 55 on the Helsinki Chronic pain index scale).

Pain intensity was measured in a subjective manner, using two scales widely recognized by other researchers - the Helsinki chronic pain index (Hielm-Björkman et al., 2009), and the canine brief pain inventories (Brown et al., 2008), which were completed by the owners before and after the end of treatment. After selecting the five patients and stopping any previous treatment (if necessary), the study protocol involved recording the anamnesis, performing clinical examination, confirming the diagnosis by radiographic technique and taking blood samples. These were necessary to determine whether the dog qualified for participation in the study by evaluating kidney function, liver function, and CBC values. The obtained values, along with additional blood

parameters, were then analysed before and after treatment to assess any potential change and to identify the presence or absence of metabolic side effects.

RESULTS AND DISCUSSIONS

Case no 1, an 11-year-old female mixed-breed dog weighing 30 kg, was diagnosed a year ago with arthrosis affecting both acetabular cavities, the head and neck of the left femur, and the head of the right femur. Her initial treatment included a supplement containing glucosamine, chondroitin, and hyaluronic acid. She was also given Curcumin (1 pill per day), Omega-3 (1000 mg, 1 pill per day), Gabapentin (300 mg), and Silymarin (1 pill per day). However, approximately a year later, she was diagnosed with additional spondylosis in the L3-L4 vertebrae. Blood tests and a cardiological examination revealed no abnormalities. As a result, her previous treatment was discontinued and, 48 hours later, replaced with a Doloflamil. She received five pills per day for 21 days. Pain levels decreased both during and after the treatment. After completing this therapy, Gabapentin was reintroduced, but due to the positive effects of Doloflamil, the dosage was reduced by half, showing significant improvement in her condition.

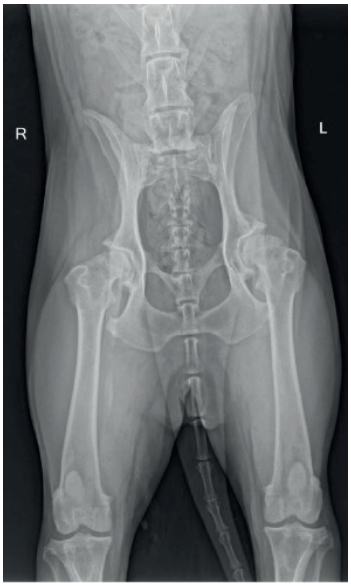

Figure 2. Sclerosis of the femoral head and acetabular cavity, with bilateral mild bone remodeling

Case no 2, an 11-year-old male Labrador weighing 35 kg, retired from police service two years ago. He was diagnosed with arthrosis five years ago, along with spondylosis in the T_3-T_7 region and lameness in his left hindlimb. Blood tests revealed no significant abnormalities. For treatment, he was prescribed Gabapentin 300 mg (one pill per day), WeJoint Plus (one pill per day), Omega 3 (1 g per day), and Hepatiale 550 mg (one pill per day). A year ago, he received monoclonal antibody therapy with Librela 20 mg for two months, administered once per month. This initially provided relief, but after three months, his arthrosis symptoms, pain, and neurological issues returned. He was given Doloflamil for 21 days, starting with five pills per day. Once the Doloflamil treatment was stopped, he resumed his previous Gabapentin treatment, though at a reduced dose, which was sufficient to maintain his comfort.

Case no 3 was represented by a female Bichon Maltese of 10 years and 7 kg, who was diagnosed with bilateral arthrosis of the femoral head, with the left side being more deteriorated than the right. Treatment with Doloftamil was administered for 21 days, at a dose of one pill per day, and the owner noticed a considerable decrease in pain after this period.

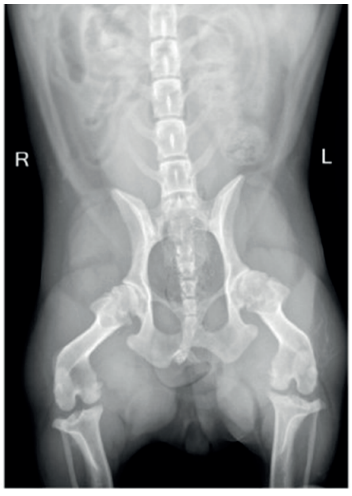

Figure 3 Sclerosis of the femoral head and acetabular cavity, with severe bone remodeling and mineralization on the femoral head with formation of new bone, bilaterally

Case No. 4 was a German Shepherd, 7 years old and weighing 43 kg. He had been diagnosed

with arthrosis 2 years ago, but for about 1 year the symptoms worsened. Previously, he received treatment with We joint. The blood tests showed no abnormalities, so the previous treatment was stopped and the patient started therapy with Doloflamil for 21 days, 8 pills/day. After one day, the pain decreased considerably and remained at this level for a long period, in contrast to the experience with previous therapies.

Patient no 5 was a male Labrador retriever, 41 kg and 12 years old. One year ago, he was diagnosed with bilateral coxo-femoral arthrosis, which was treated with Gabapentin 40 mg (1 tablet/day) and Silymarin 1g (1 tablet/day).

In February 2022, the dog's clinical condition worsened, showing signs of right-side lameness, difficulty lying down and standing up, along with neurological findings of paraparesis and pain upon palpation of the pelvis and thoracolumbar spine. Blood test results were normal. To alleviate severe pain, meloxicam was administered for three days, followed by the introduction of Doloflamil, 24 hours later. The prescribed dosage was 8 pills per day for 21 days. One month later, the dog's gait showed improvement, he was able to run at a light jogging pace. After completing the initial treatment, Gabapentin was reintroduced at half the usual dosage, which was sufficient to manage the residual pain.

The Diagram 1 and 2 are based on two pain assessment scales. The blue columns represent the data recorded before treatment, showing the intensity of pain, the dog experienced prior to receiving Doloflamil. In contrast, the orange columns depict the pain levels recorded after treatment.

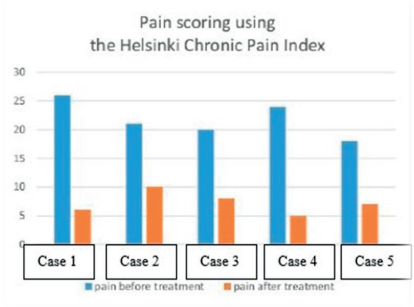

Diagram 1. The results of pain evaluation using Helsinki Chronic Pain Index

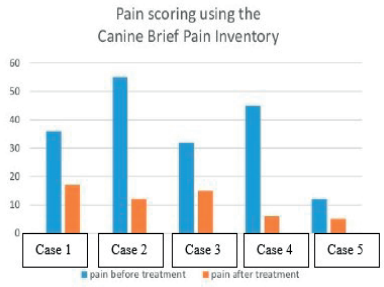

Diagram 2. The results of pain evaluation using Canine Brief Pain Inventory

Pain evaluation considered daily activities such as getting up from decubitus, climbing stairs, and jumping. It also evaluates behavioural changes, like increased vocalization or aggression. The pain is rated on a scale of 0 to 10 in the "Canine Brief Pain Inventory", which includes 10 questions, and on a scale of 0 to 4 in the "Helsinki Chronic Pain Index", which consists of 11 questions, where 0 represents the absence of pain. The total pain score is calculated by summing up the responses from all the questions, providing a numerical value that allows the comparison performed before and after treatment.

Concerning the global results, it can be noticed that regarding the predisposition factors, the research has shown that arthrosis occurs at geriatric age, as the average age of the patients was 10 years, value that has been previously demonstrated by similar studies (Anderson et al., 2020). Related to the breed, out of the five patients included in the study, two of them belonged to breeds whose predisposition has been previously demonstrated – Labrador Retriever and German Shepard (Beuing et al., 2000; Sallander et al., 2006). Regarding the central element of the article, the effect of the tested product in reducing pain, the results show that all patients experienced a significant improvement, regardless of the scale of measurement used. In this study the minimum tested period was as recommended by the manufacturer (21 days) to obtain visible results. However, continuing the treatment over a longer period and combining phytotherapy with allopathic treatment could significantly improve current therapeutic protocols.

It is wide known that the standard pharmacological management of arthrosis in

veterinary medicine frequently involves the administration of nonsteroidal anti-inflammatory drugs (NSAIDs), which exert their therapeutic effect primarily by inhibiting cyclooxygenase (COX) enzymes, thereby reducing the synthesis of pro-inflammatory prostaglandins (Henea et al., 2021). While NSAIDs are effective in alleviating pain and inflammation, their long-term use is associated with significant adverse effects, including gastrointestinal ulceration, renal toxicity, hepatotoxicity, and altered hemostasis, particularly in geriatric or systemically compromised animals (Clark, 2015; Beșchea Chiriac & Solcan, 2024).

In contrast, phytotherapy offers a promising, multi-modal approach to the management of arthrosis in dogs. Botanical extracts such as *Boswellia serrata*, *Curcuma longa* (curcumin), *Harpagophytum procumbens* (devil's claw), and *Urtica dioica* (stinging nettle) have demonstrated anti-inflammatory, antioxidant, and chondroprotective properties in both *in vitro* and *in vivo* studies (Mills & Bone, 2000). These compounds modulate inflammatory pathways without the severe adverse effect profile associated with NSAIDs.

Furthermore, phytotherapeutic agents often exert synergistic effects, targeting multiple biochemical pathways involved in arthrosis pathogenesis. Additionally, polyphenols and flavonoids present in many medicinal plants possess strong antioxidant capabilities, helping to mitigate oxidative stress, a known contributor to chronic joint inflammation and cartilage erosion.

The incorporation of phytotherapy into veterinary practice aligns with the growing emphasis on integrative and multimodal pain management strategies. While phytotherapeutic agents are not without limitations – such as variability in bioavailability, standardization, and regulatory oversight – their favourable safety profile and potential to reduce reliance on NSAIDs support their role as either adjunctive or primary therapeutic options for long-term OA management. Rigorous clinical trials and pharmacokinetic studies are warranted to optimize dosing regimens, evaluate therapeutic efficacy, and ensure quality control.

These arguments emphasise the fact that phytotherapy represents a scientifically credible and clinically relevant alternative to conventional NSAID therapy in canine osteoarthritis. Its ability to reduce inflammation, preserve joint integrity, and minimize systemic toxicity makes it an attractive option in the pursuit of sustainable, long-term management of arthrosis in dogs.

CONCLUSIONS

Arthrosis is a frequently encountered disease in geriatric canine population, with a multifactorial aetiology, which significantly affects the animal's quality of life through the presence of pain. In the present study, the median age was 10 years old, and two patients belong to breeds whose predisposition has been previously proven (Labrador Retriever and German Shepard).

The diagnosis of this condition must include history and clinical examination findings, but confirmation and staging of the disease is performed by radiography, as proceeded with the dogs included in the study

In all five patients, phytotherapy demonstrated a reduction in pain, no matter what pain scale was used.

In patients who needed reintroduction of allopathic medication, the use of phytotherapy led to a decrease in the usual doses. Nevertheless, given the dynamic evolution of arthrosis, neurological and pain reassessment should be performed periodically, no matter which treatment is used.

REFERENCES

Allegri, M., Clark, M. R., De Andrés, J., & Jensen, T. S. (2012). Acute and chronic pain: where we are and where we have to go. *Minerva anestesiologica*, *78*(2), 222–235.

Anderson, K. L., Zulch, H., O'Neill, D. G., Meeson, R. L., & Collins, L. M. (2020). Risk Factors for Canine Osteoarthritis and Its Predisposing Arthropathies: A Systematic Review. *Frontiers in veterinary science*, 7, 220. https://doi.org/10.3389/fvets.2020.00220

Beșchea Chiriac, S. I., & Solcan, G. (2024). *Toxicologie clinică veterinară*. Editura „Ion Ionescu de la Brad".

Beuing, R., Mues, C. H., Tellhelm, B., & Erhardt, G. (2000). Prevalence and inheritance of canine elbow dysplasia in German Rottweiler. *Journal of Animal Breeding and Genetics*, *117*(6), 375-383.

Brown, D., Boston, R., Coyne, J., & Farrar, J. (2008). Ability of the Canine Brief Pain Inventory to detect response to treatment in dogs with osteoarthritis.

Journal of the American Veterinary Medical Association, *233*(8), 1278–1283. https://doi.org/10.2460/javma.233.8.1278

Calixto J. B. (2000). Efficacy, safety, quality control, marketing and regulatory guidelines for herbal medicines (phytotherapeutic agents). *Brazilian journal of medical and biological research = Revista brasileira de pesquisas medicas e biologicas*, *33*(2), 179–189. https://doi.org/10.1590/s0100-879x2000000200004

Clark, S. (2015). Canine osteoarthritis and treatments: A review. *Veterinary Science Development*, *5*(1), Article 5931. https://doi.org/10.4081/vsd.2015.5931

Clements, D. N., Carter, S. D., Innes, J. F., & Ollier, W. E. (2006). Genetic basis of secondary osteoarthritis in dogs with joint dysplasia. *American journal of veterinary research*, *67*(5), 909–918. https://doi.org/10.2460/ajvr.67.5.909

Fox, S., & Mills, D. (2010). *Multimodal Management of Canine Osteoarthritis* (1st ed.). CRC Press. https://doi.org/10.1201/9780367853877

Henea, M. E., Grecu, M., Șindilar, E. V., & Solcan, G. (2021). Physiotherapy methods for improving mobility in aseptic femoral head necrosis. *Revista Română de Medicină Veterinară*, *31*(3), 41–44.

Hielm-Björkman, A. K., Rita, H., & Tulamo, R. (2009). Psychometric testing of the Helsinki chronic pain index by completion of a questionnaire in Finnish by owners of dogs with chronic signs of pain caused by osteoarthritis. *American Journal of Veterinary Research*, *70*(6), 727-734. Retrieved Mar 27, 2025, from https://doi.org/10.2460/ajvr.70.6.727

Jolly, C. M. J. (2022). Phytotherapy: A way of treating acute pain in some dogs with arthrosis [bachelor's thesis]. University of Agronomic Sciences and Veterinary Medicine of Bucharest.

Loder, R. T., & Todhunter, R. J. (2017). The Demographics of Canine Hip Dysplasia in the United States and Canada. *Journal of veterinary medicine*, 2017,5723476. https://doi.org/10.1155/2017/5723476

Mills, S., & Bone, K. (2000). Principles and practice of phytotherapy: Modern herbal medicine. Churchill Livingstone.

Pettitt, R. A., & German, A. J. (2015). Investigation and management of canine osteoarthritis. In *Practice*, 37, 1–8.

Poppenga, R. H. (2007). Herbal medicine: Potential for intoxication and interactions with conventional drugs. In S. G. Wynn & B. J. Fougère (Eds.), *Veterinary herbal medicine* (pp. 183–207). Mosby. https://doi.org/10.1016/B978-0-323-02998-8.50016-0

Sallander, M. H., Hedhammar, A., & Trogen, M. E. (2006). Diet, exercise, and weight as risk factors in hip dysplasia and elbow arthrosis in Labrador Retrievers. *The Journal of nutrition*, *136*(7 Suppl), 2050S–2052S. https://doi.org/10.1093/jn/136.7.2050S