Used with permission of the Journal of the American Holistic Veterinary Medical Association (JAHVMA).
Article first appeared in Volume 55, Summer Issue, 2019.

Case Report

Homeopathic Treatment of an Akita Diagnosed with Eosinophilic Meningoencephalitis

Henry Stephenson, BVSc

Author contact:
The Natural Vets
338 Mons Road, Forest Glen, Australia
dr.henry@thenaturalvets.com.au

Abbreviation

EME **Eosinophilic meningoencephalitis**

Abstract

A 6-year-old female Akita presented to a general practice with acute paralysis of the lower limbs. Eventually, she was referred to a specialty clinic where a definitive diagnosis of eosinophilic meningoencephalitis (EME) was made. Over the next 52 days, the paralysis slowly progressed despite treatment with high doses of immunosuppressant drugs. After she was given a grave prognosis, adjustments were made to the conventional immunosuppressant medications, and treatment with the homeopathic medicine *Apis mellifera* was initiated. She began to improve within a few days; after 18 days of homeopathic treatment she was able to walk, and she gradually regained full strength with a complete recovery.

Introduction

Eosinophilic meningoencephalitis (EME) is diagnosed in humans and animals when a neurological disease is associated with eosinophilic pleocytosis, which is the presence of increased numbers of eosinophils in the cerebrospinal fluid (CSF). In a series of 93 dogs with neurological disease, eosinophilic pleocytosis, with up to 80% of the white cells in the CSF being eosinophils, was found in cases of cryptococcosis, toxoplasmosis, infarction of the caudate nucleus, cerebrocortical infarction, cerebral lymphosarcoma, granulomatous encephalitis, and tumors of the spinal and epidural tissues (1, 2). Meningoencephalitis with eosinophilic pleocytosis has also been recognized in dogs with aberrant migration of *Angiostrongylus cantonensis* (the lungworm of rats found in Southeast Asia and various islands including Hawaii), protothecal meningoencephalitis, distemper, rabies, and bacterial infections (2–6). A Canadian study suggested *Toxoplasma gondii* or *Neospora caninum* as the cause of EME in 2 out of 8 canine cases (4).

Aggressive immunosuppression is the current standard of care for EME. Various prednisolone-based protocols have been reported either as a single-drug therapy or in combination with other immunosuppressive agents (7–13). To date, most of the reports on EME are retrospective studies with limited numbers of cases and indeterminate diagnoses; thus, a single, specific therapeutic protocol has not been established. Results from recent studies are inconsistent regarding the combination of prednisone with other immunosup-

pressive drugs compared to treatment with prednisone alone (9, 14). However, the addition of immunosuppressive agents to prednisone is generally accepted as beneficial because it allows for reduction of the prednisone dose and, subsequently, its adverse effects (9, 15).

The clinical signs do not always resolve in response to the currently recommended protocols; thus, the search for other therapeutic options for EME continues (16).

The following is the first reported case of permanent remission of the signs of EME in response to homeopathic treatment.

Case Report

A 6-year-old, female, spayed Akita was presented for homeopathic treatment of EME that was unresponsive to conventional therapies. Initially, she was seen by her primary care veterinarian for a 3-day history of rapidly progressive ataxia and weakness in both hind legs. Her medical history included undiagnosed periods of intermittent lethargy and an abdominal foreign body that had been removed when she was a puppy.

On physical examination by the primary care veterinarian, she was unable to stand. Her temperature was 102.6°F (39.2°C), and although she appeared slightly restless, her demeanor was responsive and happy. She was licking her mouth and lips as if the membranes were dry. Her head and neck strength were good, and there was no neck or back pain; her tail was hanging in an abnormally low position; muscle tone was reduced in the hind legs although it was normal in the front legs. On neurologic examination, her cranial nerve reflexes and pupils were normal, but she had a reduced gag reflex; patellar reflexes were increased bilaterally; the panniculus reflex was dull caudal to the thoracolumbar junction; she had no proprioceptive responses in either hind leg; she had normal placing response with her front feet and could wheelbarrow, hop, and hemistand with her front feet. She had passed some urine and stool while lying down.

The dog was referred to an internal medicine specialist for further diagnosis and treatment. (See **Table 1** for full diagnostic testing, results, medications, and response to treatments). A microscopic examination of centrifuged CSF showed innumerable eosinophils, consistent with eosinophilic pleocytosis, and moderate numbers of macrophages. The macrophages were leukophagocytic, erythrophagocytic, and contained hemosiderin. There was also an increased protein level of 3.53g/L.

The laboratory interpretation was chronic eosinophilic inflammation that is often seen with angiostrongylosis, but other diagnostic differentials included protothecosis, fungal disease, and protozoal disease. The increased protein level was a possible indication of damage to the blood-brain barrier. The final diagnosis was EME.

The dog was treated at the specialty hospital for 11 days at which point she was discharged to continue treatment at home. During that time, the patient's ataxia slowly progressed until she was unable to stand without assistance. After 31 days at home, she was brought back to the specialty hospital. Upon reexamination, she swayed markedly and was knuckling with both hind legs even with sling support; there was no conscious proprioception or voluntary movement in either hind leg. Without the sling, her hind legs crossed and she would fall. There was markedly delayed proprioception and reduced withdrawal reflexes in both hind limbs; patellar and sciatic reflexes were normal to mildly increased. She retained some bladder control.

She was readmitted to the specialty hospital for an additional 10 days. On day 49 she had a myelogram and a second CSF collection; the myelogram was normal, and there was still increased protein in the CSF, but the cell count was normal except for the eosinophilia. After the initial presentation to the primary care veterinarian and 52 days of conventional treatment, the dog was given a grave prognosis. The owners elected to pursue alternative treatment immediately.

Upon presentation for homeopathic treatment, the dog was bloated with a pendulous abdomen, and she was panting. There were small ulcers in each upper lip beside the upper canine teeth. She had no voluntary movements in either hindlimb. She was eating, drinking large quantities, and had diarrhea.

Table 1. Days 1–52, conventional diagnostics, results, treatments, and responses.

DAY	TEST	DIAGNOSTIC TESTING RESULTS	TREATMENT	RESPONSE TO TREATMENT
1	Comprehensive and hematology blood testing	MCV 54 fl (64–76) MCH 19 pg (21–26) AST 198 IU/L (18–80) ALT 941 IU/L (16–90) CK 1515 IU/L (73–510)		Weakness in hind legs Difficulty standing
	Thoracic radiography	Non-remarkable		
	CSF collection	Protein 3.53g/L (<.3g/L) Eosinophilic pleocytosis Macrophages leukophagocytic and erythrophagocytic and contained hemosiderin		
	Abdominal ultrasound	Non-remarkable		
2			IV Fluid therapy with Hartmann's 90 ml per hr Clindamycin 300 mg PO *q* 8 hr Itraconazole 300 mg PO *q* 12 hr Pantoprazole 1mg/kg IV *q* 12 hr Dexamethasone 0.2mg/kg IV *q* 12 hr	Diarrhea
	CSF culture started CSF PCR (Borrelia, Cryptococcus, Neospora, Bartonella, Toxoplasma, Distemper) started			
	Urine culture fungal Urine culture aerobic Urine cytology	Rods and neutrophils found in urine on cytology		
5			Metronidazole 300 mg PO *q* 12 hr	Diarrhea continued
6	CSF PCR results	Negative No protozoal organisms found	Amoxicillin/clavulanic acid 400 mg PO *q* 12 hr Clindamycin stopped	Hemorrhagic diarrhea
7	Urine culture and sensitivity results	Proteus mirabilis Sensitive to all antibiotics tested including amoxicillin/clavulanic acid	Dexamethasone stopped Pantoprazole stopped Prednisolone 30 mg PO *q* 12 hr added Famotidine 30 mg once daily added	Able to walk but ataxic
11				Able to rise but very weak
13	CSF fungal culture results	Negative		Voracious appetite
16			Amoxicillin/clavulanic acid stopped	
26	Urine cytology, culture and sensitivity	Rods and neutrophils found in urine	Enrofloxacin 250mg PO once daily added	Polyuria/Polydipsia
30	Urine antibiotic sensitivity results	Enrofloxacin-resistant	Enrofloxacin stopped Marbofloxacin 100 mg PO once daily added Prednisolone lowered to 30 mg PO once daily	
	Urine fungal culture result	Negative		
42	Readmission to specialist hospital		Prednisolone dose changed to 40 mg PO once daily Azathioprine 50 mg PO once daily added	Sudden defecation Urinary incontinence Needed sling support to walk
43			Cyclosporine 150 mg PO *q* 12 hr added Marbofloxacin stopped	Ataxia worsened Unable to stand

Table 1 Continued.

DAY	TEST	DIAGNOSTIC TESTING RESULTS	TREATMENT	RESPONSE TO TREATMENT
44	Urine Culture result	Negative		
49	CSF Collection repeated	Increased protein levels Eosinophilic pleocytosis		No voluntary movement in hindlegs
	Myelogram	Non-remarkable		
50				No deep pain in hind legs
51			Prednisolone dose decreased to 30 mg PO BID	No voluntary motor or deep pain in hind legs
52			Prednisolone dose decreased on owner's request to 20 mg PO BID Cyclosporine and azathioprine stopped	Grave prognosis with no voluntary motor or deep pain in hind limbs

On day 52 after the initial presentation, the owners elected to lower the prednisolone dose from 30 mg to 20 mg PO twice daily and to stop the cyclosporine and azathioprine. Homeopathic treatment was initiated with *Apis mellifera* 200C (a) (diluted into liquid, 3 drops PO 3 times daily).

On day 53, the second day of homeopathic treatment, she recovered some withdrawal reflex in both hind limbs and had some feeling along her lower back and perianal region. She was eating but was polydipsic. The *Apis-mel* was decreased to once daily.

On day 59 she could move her back legs when she was excited or when her owners lifted her in a sling. The medication potency was changed to *Apis-mel* LM1 (a) (3 drops PO once daily).

On day 62 she had regained some feeling and strength and could hold herself when lifted up.

By day 66 she could stand to eat if the owners lifted her up; she had good bladder control but was still fecal incontinent; the polydipsia continued; the diarrhea had stopped. Treatment with *Apis-mel* LM1 was continued at the same dose, but the prednisolone dose was lowered to 5 mg daily.

On day 69, she could pull herself to her feet unassisted and was able to stand and urinate unassisted. Even though she could take a few steps, her hind legs crossed over, and she was knuckling when standing. No hair had regrown where she was clipped for the CSF tap. She had become calmer since starting the homeopathic medicine. The prednisolone was stopped completely after 18 days of homeopathic treatment.

On day 76, although she was still very weak in the hindlimbs, she could walk short distances unassisted but still had trouble on slippery surfaces.

Remarkable improvement had been noted over days 82–87; this timing corresponded with days 31–36 of homeopathic treatment. She started to stretch out more when walking even though she was walking with a jerking motion of the back legs; the front legs remained strong; she began to move her tail; the urinary and bowel incontinence resolved; she played with the cat; she was eating well. Even though the prednisolone caused her to lose much of the muscle mass around her face and her abdomen had become pendulous, these areas were tightening up, and her face looked normal again. At this point, the potency of *Apis-mel* was increased to LM3 potency (a) (3 drops PO once daily).

By day 108 since diagnosis (day 57 of homeopathic treatment), she was able to trot about with a normal gait, and the hair was growing on the clipped areas. The tendon laxity from the high doses of prednisolone and the hyperextension of the joints from lack of movement in all her legs was starting to resolve.

By day 123, fecal urgency prevented her from being able to get outside for toileting, as if the signal was too sudden. She was able to get outside for urination; however, there was delayed onset of urinary flow. The *Apis-mel* potency and dose frequency were changed to 200C (a) (3 drops PO once a week).

Twenty days later, day 143, there were signs that her condition had regressed. Her energy was slightly down, and although she was still able to walk, she was not as free with her movements; she was eating in a sitting position instead of standing. In response to these negative changes, the dose of *Apis-mel* was changed to an LM5 potency (a) (2 drops PO once daily). There was evidence of improvement shortly after the change in potency and increase in frequency of the homeopathic medicine. By day 147, she was standing to eat again.

On day 154, she was not doing as well and was sitting down to eat again. She was restless and seemed oversensitive to touch on her lower back and around her face; she was not interacting normally with her cat companion or her owners; she was not drinking very much. Her medicine was changed to a higher potency of *Apis-mel* 1M (a) (3 drops PO for just 1 dose), and then the homeopathic medication was discontinued.

By day 162, it was evident that the dog responded positively to the higher potency; she seemed to have more vitality, was holding her tail up in a more erect position, and was less sensitive when her skin was touched.

By day 192, 141 days after homeopathic treatment was initiated, she was doing very well. Her coat had a healthy shine and hair had grown back over the lumbar area. Her owners had to cut back on her food because she had put on too much weight. Her gait was completely normal, and she could run and jump as she used to. On physical examination, 308 days after the start of the homeopathic treatment, she was completely normal in every way, and this was still the case at last communication, 18 months after the initial diagnosis (See **Table 2** for the summary of homeopathic treatments and responses.)

Discussion

Homeopathic treatment can successfully treat EME as demonstrated by this case of a 6-year-old, spayed, female Akita. EME was definitively diagnosed with CSF taps that showed eosinophilic pleocytosis in combination with the high CSF protein levels, a negative PCR, and negative cultures.

Initially, the dog showed some response to immunosuppressive therapy with dexamethasone and then prednisolone, but the recovery plateaued. Even after the addition of cyclosporine and azathioprine, there was no sign of improvement. In fact, the paralysis became progressively worse. As each day went by, she began to exhibit more of the side effects associated with these medications, such as general weakness, polydipsia, polyuria, polyphagia, pendulous abdomen, and decreased muscle mass around the face. When she could eventually stand, both carpal joints were hyperextended because of joint laxity.

Various antibiotics were given during the first 43 days of conventional treatment, but they were dis-

Table 2: Days 52–192, medicines administered and patient's response.

DAY	HOMEOPATHY TREATMENT DAY	MEDICINE ADMINISTERED	RESULT OF TREATMENT
52	1	Prednisolone dose lowered from 30 mg to 20 mg BID Cyclosporine and azathioprine stopped Homeopathic treatment Apis-mel 200C potency TID began	Grave prognosis with no voluntary motor or deep pain in either hind limb at start of homeopathic treatment
53	2	Apis-mel 200C once daily	Improvement began with evidence of some withdrawal reflex.
66	15	Prednisolone dose 5 mg once daily Apis-mel LM1 potency daily	Diarrhea stopped. Stood with assistance.
69	18	Prednisolone discontinued Apis-mel LM1 continued	Pulled herself to her feet
76	25	Apis-mel LM1 continued	Could walk but was weak
87	36	Apis-mel potency increased to LM3	Stretched out when walking. Toileted normally.
123	72	Apis-mel potency changed to 200C once weekly	Some urgency with stool
143	92	Apis-mel potency changed to LM5 daily	Energy lower; did not move as freely
154	103	Apis-mel potency changed to 1M (1 dose only)	Restless and not interactive
192	141	No medicines	Normal in every way

continued once all cultures and PCR results came back negative. Signs of improvement began on the 53rd day of conventional treatment, but that was also the day after the start of homeopathic treatment.

There was an 18-day period in which prednisolone was given along with the homeopathic medicine, so it is possible that a delayed response to the prednisolone contributed to the cure of this dog. The counterargument can be made that even if the prednisolone contributed to her regression of signs to some extent, the complete remission of her signs was accomplished with the homeopathic medicine. She had been deteriorating gradually while on prednisolone for the 45 days before the homeopathic medicine was added. Once the homeopathic treatment was started, the dose of prednisolone was gradually decreased over 18 days from 60 mg to 5mg per day until it was discontinued. When she was being treated with the homeopathic medicine alone, there were episodes of regression, but she improved steadily once the potency of the homeopathic medicine was adjusted.

Homeopathy is a system of medicine developed by the German physician Samuel Hahnemann (1755–1843). Homeopathic medicines are prescribed based on the concept of "let like cure like." The indications of homeopathic medicines are determined by giving healthy human provers (testers) a substance and then asking them to record the mental, emotional, and physical symptoms that arise as a result of the medicine's effects. This information is recorded in materia medicas and repertories along with clinical signs and diseases that are cured by the homeopathic medicines (17).

In veterinary patients, homeopathic medicines are selected by careful collection of the presenting pathological signs and then matching these signs to 1 of the many thousands of homeopathic medicines that have been shown to produce these exact symptoms in healthy beings.

There are approximately 176 homeopathic medicines that have been used to cure spinal paralysis of various etiologies. In order to decide which of these medicines to use, the Akita's signs were gathered from a detailed ac-

count of the patient's medical history, including previous health issues and the nature of the patient. In this case, the main clinical signs that were used were meningitis, paralysis, the mental sign of irritability, and the nature of a busy attitude. The signs of diarrhea and polydipsia were not used in the analysis as they were most likely caused by drug reactions. The information was analyzed by computer software (b), and the highest-ranking homeopathic medicines were *Nux vomica* first, followed by *Gelsemium*, and then *Apis-mel* (**Figure 1**).

Nux-v is a medicine that affects the cerebrospinal axis with a focus on nerves and the digestive tract; it is indicated for patients that are irritable, fanatic, and competitive (19). Patients that need this medicine will usually be warmth seeking; but this patient was cool seeking. "Thermal modalities" are considered highly specific differentiating characteristics for homeopathic medicines and should be taken into consideration in order for a treatment to be curative and not just palliative.

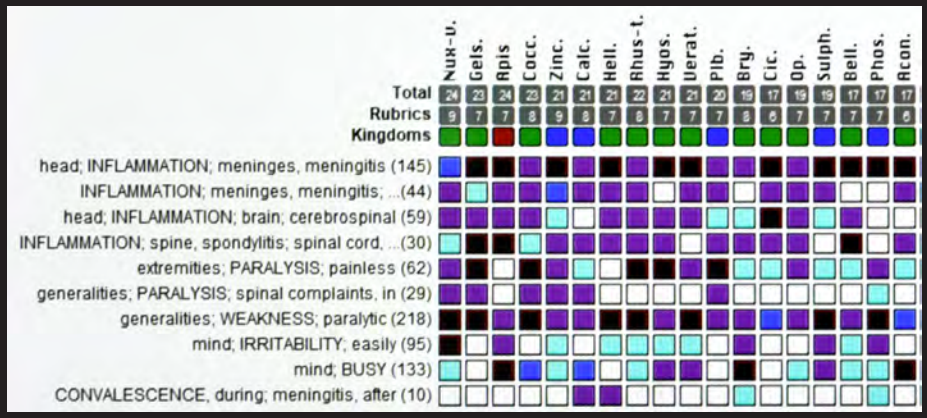
The next suggestion was *Gels*. Patients who require this medication display mental dullness, dizziness, and are drowsy and droopy with a keynote being heavy drooping eyelids (20). The patient in this case was irritable and showed a restless alertness that is not in the purview of Gels.

In this case, *Apis-mel* was the medicine that matched the signs most accurately. According to homeopathic provings, *Apis-mel* acts especially on outer parts, skin, coatings of inner organs, and serous membranes. It produces serous inflammation with effusion of the membranes of the brain, heart, and pleura. Patients who need this medicine are worse from heat in any form (18). The dog was quite restless, fidgety, hard to please, irritable, and had always been very difficult to examine by her owners or a veterinarian. She began drinking excessively only after being on the prednisolone. Usually, she was a thirstless dog who was also bothered by warmer weather and would avoid heat when possible. She was always busy and active at home. She had to be kept separate from the cat because she would not leave it alone and exhibited jealousy if the owners played with the cat. Each of these traits are strong mental and general symptoms of *Apis-mel* and helped to determine that this was the best medicine for this case.

The correct medicine for a given case depends not only on its accurate homeopathic selection but also on the correct potency and dosing (21). For this case, *Apis-mel* was prescribed at a potency of 200C. Homeopathic medicines are usually given less frequently than in this case; however, this patient was on high doses of immunosuppressive medicines, so frequent repetition was needed to stimulate or awaken the vital healing forces.

The potency of the *Apis-mel* was changed several times during this patient's treatment. It is quite common to have to adjust the potency of the medicine as the healing progresses.

Figure 1: Repertorization table.



The computer analysis of the patient's signs shows the likely homeopathic medicines for this case.

As the immunosuppressant drug dosages were lowered and the patient began to exhibit some healing responses, the potency of the homeopathic medicine was changed to *Apis-mel* LM1. The LM potencies are considered optimal for long-term use in chronic cases because they give a more even healing effect. Potencies up to LM30 are used, and the potency is usually increased each month for the treatment of chronic diseases. In this case,

the potency was changed to 200C to see if the medicine could be given less frequently or if a different strength would speed up the healing process. The final strength of 1M at a single dose was given when she became more sensitive along her back. This sensitivity indicated that the previous dose of medicine was no longer controlling her signs, indicating a repetition of the last medicine was indicated or an increase in the potency was required to see if the healing effect would last longer and work deeper to finish the case. Since her health would improve each time the potency of the medicine was increased during her treatment, the potency of the medicine was increased once again. This dose cleared all her remaining clinical signs.

Eosinophilic meningoencephalitis occurs as a result of an immune system malfunction. The conventional treatment for this condition is to suppress the overfunctioning immune system. In this case, homeopathic medicine enabled the body to immediately begin the repair processes to eventually reinstate the appropriate immune system function in order for the body to return to a healthy state. Homeopathic treatment can be considered in cases of EME that are refractory to conventional treatment or when conventional treatment is declined. More case reports and clinical trials would be beneficial to provide additional information regarding homeopathic treatment of this condition.

Endnotes

a. Homeopathic medicines were manufactured by Simillimum Pharmacy in New Zealand. Each potency is purchased by our clinic in 98% ethanol. For ongoing home use, 1 drop of this clinic strength is diluted in a 25 ml bottle containing pure water with 5% alcohol as a preservative. Each dose consists of 3 drops from this bottle.

b. MacRepertory homeopathic program. Copyright Synergy Homeopathic 1986–2018 with Complete Repertory 2017. Copyright Roger Van Zandvoort.

See references on page 34.

References

1. Vandevelde M, Spano JS. Cerebrospinal fluid cytology in canine neurologic disease. *Am J Vet Res*. 1977;38(11):1827–1832.

2. Williams JH, Köster LS, Naidoo V, et al. Review of idiopathic eosinophilic meningitis in dogs and cats, with a detailed description of two recent cases in dogs. *J S Afr Vet Assoc*. 2008;79(4):194–204.

2. Jubb KVF, Kennedy PC, Palmer N. *Pathology of domestic animals*. Vol 1. 3rd ed. Orlando: Academic Press, 1985.

4. Schultze AE, Cribb AE, Tvedten HW. Eosinophilic meningoencephalitis in a cat. *J Am Anim Hosp Assoc*. 1986;22:623–627.

5. Smith-Maxie LL, Parent JP, Rand J, Wilcock BP, Norris AM. Cerebrospinal fluid analysis and clinical outcome of eight dogs with eosinophilic meningoencephalomyelitis. *J Vet Intern Med*. 1989;3(3):167–174.

6. Tyler DE, Lorenz MD, Blue JL, Munnell JF, Chandler FW. Disseminated protothecosis with central nervous system involvement in a dog. *J Am Vet Med Assoc.* 1980;176(10 Pt 1):987–993.

7. Coates JR, Barone G, Dewey CW, Vitale CL, Holloway-Azene NM, Sessions JK. Procarbazine as adjunctive therapy for treatment of dogs with presumptive antemortem diagnosis of granulomatous meningoencephalomyelitis: 21 cases (1998–2004). *J Vet Intern Med*. 2007;21(1):100–106.

8. Menaut P, Landart J, Behr S, Lanore D, Trumel C. Treatment of 11 dogs with meningoencephalomyelitis of unknown origin with a combination of prednisolone and cytosine arabinoside. *Vet Rec*. 2008;162(8):241–245.

9. Flegel T, Boettcher IC, Matiasek K, et al. Comparison of oral administration of lomustine and prednisolone or prednisolone alone as treatment for granulomatous meningoencephalomyelitis or necrotizing encephalitis in dogs. *J Am Vet Med Assoc*. 2011;238(3):337–345.

10. Muñana KR, Luttgen PJ. Prognostic factors for dogs with granulomatous meningoencephalomyelitis: 42 cases (1982–1996). *J Am Vet Med Assoc*. 1998;212(12):1902–1906.

11. Smith PM, Stalin CE, Shaw D, Granger N, Jeffery ND. Comparison of two regimens for the treatment of meningoencephalomyelitis of unknown etiology. *J Vet Intern Med*. 2009;23(3):520–526.

12. Wong MA, Hopkins AL, Meeks JC, Clarke JD. Evaluation of treatment with a combination of azathioprine and prednisone in dogs with meningoencephalomyelitis of undetermined etiology: 40 cases (2000–2007). *J Am Vet Med Assoc*. 2010;237(8):929–935.

13. Zarfoss M, Schatzberg S, Venator K, et al. Combined cytosine arabinoside and prednisone therapy for meningoencephalitis of unknown aetiology in 10 dogs. *J Small Anim Pract*. 2006;47(10):588–595.

14. Pakozdy A, Leschnik M, Kneissl S, et al. Improved survival time in dogs with suspected GME treated with ciclosporin. *Vet Rec*. 2009;164(3):89–90.

15. Talarico LR, Schatzberg SJ. Idiopathic granulomatous and necrotising inflammatory disorders of the canine central nervous system: a review and future perspectives. *J Small Anim Pract*. 2010;51(3):138–149.

16. Barnoon I, Shamir MH, Aroch I, et al. Retrospective evaluation of combined mycophenolate mofetil and prednisone treatment for meningoencephalomyelitis of unknown etiology in dogs: 25 cases (2005–2011). *J Vet Emerg Crit Care (San Antonio)*. 2016;26(1):116–124.

17. Epstein S, Hardy R. Clinical resolution of nasal aspergillosis following therapy with a homeopathic remedy in a dog. *J Am Anim Hosp Assoc*. 2011;47(6):e110–e115.

18. Boericke W. *Pocket Manual of Homeopathic Materia Medica and Repertory.* New Delhi: B Jain, 2004:61.

19. Vermeulen F. *The Arcana of Materia Medica Illuminated*. Haarlem: Emryss, 2004:999.

20. Murphy R. *Homeopathic Remedy Guide*. Virginia: Lotus Health, 2000:732.

21. Hahnemann S. *Organon of the Medical Art*. Palo Alto: Birdcage Press, 2001:248.