

MANAGEMENT OF CANINE IDIOPATHIC EPILEPSY USING ADD-ON LEVETIRACETAM

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ABSTRACT

A three year old Dachshund dog was presented at University Veterinary Hospital, College of Veterinary and Animal Sciences, Mannuthy, Thrissur, Kerala, India with the history of repeated seizures since two months and was under treatment with phenobarbital with no improvement in condition. Based on the history, signs, clinical and laboratory examination the case was diagnosed as canine idiopathic epilepsy and was successfully managed with add-on levetiracetam along with phenobarbitone.

INTRODUCTION

Abnormal electrical activity of the brain causes seizures and a repeated seizure results in epilepsy which is a common neurological disorder of canines. Signs and symptoms exhibited during epilepsy depend on the part of the brain affected. Use of appropriate antiepileptic drugs helps to keep these seizures under control, if diagnosed promptly and accurately. Levetiracetam is an antiepileptic drug with a novel mechanism of action (Abou-Khalil, 2008). It reduces electrical activity of the brain and control seizures when used alone or as an add-on medication along with phenobarbitones (Volk *et al.*, 2008).

CASE HISTORY AND OBSERVATIONS

A three year old female Dachshund dog was brought to University Veterinary Hospital, Mannuthy with the history of repeated seizures

at half an hour interval. History suggested that the condition started two months back and the animal was under phenobarbital therapy at a dose rate of 5mg/kg orally since then. No improvement was noticed with the above therapy except for a reduction in the frequency which was observed in the initial phase of the treatment protocol. Animal was perfectly normal in the interval between two epileptic events and it had a normal appetite. There was no involuntary urination or defecation during the seizure episodes.

Animal had a regular deworming and vaccination history. Clinical examinations did not reveal any abnormality. No changes were observed on ECG. Haematological and serum parameters were unremarkable. No haemoprotozoans were observed on blood smear examination. The blood glucose level was also within normal limits.

TREATMENT AND DISCUSSION

Based on the history, clinical signs and absence of abnormal laboratory changes the case was diagnosed as idiopathic canine epilepsy which is refractory to Phenobarbital therapy. Animal was treated with the antiepileptic drug levetiracetam at a dose rate of 20 mg/kg PO twice daily (Moore *et al.*, 2010) as an adjunct with phenobarbital (Gardinal) @ 3mg/kg PO twice daily, which was at a lower rate than the previous regimen. A herbal hepatoprotective Liv-52 was also advised @1tsp daily. Owner was advised to feed the dog

thrice daily instead of twice daily.

Regular contact was maintained with the owner and a positive response to treatment was reported. Frequency and severity of epilepsy was found to be reduced. A review conducted after two weeks showed that the serum liver function tests were within normal range. Animal was then maintained on add-on levetiracetam along with phenobarbital once daily and owner was advised to present the animal once in two months for assessing hepatic function.

Epilepsy is seizure disorder with inactive intracranial causes (Ettinger and Feldman, 2007). Idiopathic epilepsy is one of the most common neurological disorder in dogs which is characterized by recurrent seizures for which there is no identifiable cause and is chronic in nature (Thomas, 2000).

Treatment of epilepsy is mainly individualized and it depends on the clinical signs and frequency of occurrence. It initially starts as a monotherapy with low initial loading dose and further adjustments depends upon patient monitoring. In the present case animal was under phenobarbital monotherapy for two months and no improvement was noticed.

Levetiracetam was then used as an adjunct therapy along with phenobarbital at a low dose rate. Levetiracetam is a newer antiepileptic drug which is completely absorbed after oral administration and reaches peak plasma concentration by one hour (Abou-Khalil, 2008). Positive response to this combination therapy was noticed and later phenobarbital was withdrawn and animal is now being maintained on levetiracetam alone.

SUMMARY

A case of canine idiopathic epilepsy was successfully managed with levetiracetam.

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