

# **A Review of current research articles investigating Separation-Related Behavioural Problems**

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## **Introduction**

Separation-Related Behavioural Problems (SRBP) or Separation Anxiety affect 25 to 30% of dogs in urban surroundings and are a major cause of euthanasia (2). Affected animals demonstrate "an emotional state characterised by distress responses in the absence of an animal or person to whom the animal is highly attached"(1). Responses include vocalisation, destructiveness and house soiling. Furthermore, 67% of owners of dogs suffering SRBP felt their dogs had a poor quality of life (2). By understanding SRBP, veterinarians and dog owners contribute to animal welfare by improving quality of life and reducing numbers euthanased. The following reviews of current research contribute to that understanding. Study 1 and 2 investigate the effectiveness of clomipramine, a tricyclic antidepressant, in treating SRBP. Study 3 investigates house soiling, often a separation-related problem.

## **Study 1: Efficacy of clomipramine in the treatment of separation anxiety in dogs (2).**

The aim was to determine an effective clomipramine dose for treating canine SRBP. There were 81 dogs diagnosed with separation anxiety used, divided into 5 groups. Each group received clomipramine either at 0.25 to 0.5 mg/kg, 0.51 to 1mg/kg, 1.1 to 2mg/kg, 2.1 to 4mg/kg or a placebo orally twice daily as a divided dose. Treatment allocations were randomised and neither researchers nor owners knew which treatment dogs received. All dogs underwent behavioural therapy, involving 3 areas, breaking owner departure and return rituals to the house and the hyperattachment of dog and owner.

Evaluation was performed by owners assessing the disappearance of separation related responses (Table 1) and veterinarians assessing the dogs' behaviour via weekly consultations or phone contact (Table 2).

After 30 to 60 days, all abnormal behaviours disappeared in over 80% of dogs receiving 2.1-4 mg/kg of clomipramine compared to 12 to 31% at lower doses or the placebo. The investigators concluded that 30 to 60 days of treatment with 2.1 to 4mg/kg of clomipramine caused SRBP to disappear more rapidly and completely than with behavioural therapy alone.

The study was conducted for a 60 day period only. Further studies could investigate relapses after ceasing medication.

## **Study 2: Evaluation of clomipramine as an adjunct to behavioural therapy in the treatment of separation-related problems in dogs (3).**

The aim was to investigate the effectiveness of clomipramine used in combination with behavioural therapy to treat SRBP in dogs. The design followed study 1 with the following differences; the behaviour modification also reinforced owner assertiveness (Table 3); only 49 dogs participated; there were significant differences between groups in dogs' age, age problems developed and severity of behaviour at study onset. These differences may affect the interpretation of results. Dogs in study 2 received either clomipramine at 0.5 to 1.0mg/kg, 1.0 to 2.0mg/kg or a placebo. A lower maximum dose than in study 1 may have contributed to the studies' differing conclusions.

When commencing the study, owners completed a baseline questionnaire rating frequencies during the past two weeks of 'general', 'attachment' and 'separation related' behaviours. Treatment lasted 8 weeks and owners completed follow up questionnaires at one, four, and eight weeks. The results of questionnaires were compared.

Clomipramine improved 'general activity' and 'attachment related' behaviours significantly. Only one 'separation related' behaviour showed an insignificant improvement after week 1. Dogs receiving the placebo underwent behavioural therapy only and showed a significant improvement in 17 out of 19 measured behaviours. The researchers concluded that clomipramine treatment was no more effective than a placebo as an adjunct to behavioural therapy in treating SRBP and that behavioural therapy is effective in treating SRBP.

Improved 'general activity' and 'attachment related' behaviours may have been due to a sedative effect. To confirm the value of behavioural therapy, further studies including drug only and no behavioural modification controls; larger sample sizes; more closely matched experimental groups and higher dose rates (ie 2.1 to 4mg/kg) could be conducted.

In both studies 1 and 2, evaluation relied on the owners' subjective assessments, some owners may have reported changes due to a placebo effect if they believed the dog was undergoing effective treatment. Thus further studies require objective measurements, such as video recordings of dogs' behaviour when alone.

### **Study 3: A Retrospective Study of Canine House Soiling: Diagnosis and Treatment (4).**

The aim was to determine the relative frequency and cause of canine house soiling and assess treatment efficacy. The method entailed reviewing canine cases presented to the Animal Behaviour Clinic at Cornell University between 1987 and 1996.

Results indicated house soiling occurred in 9% of cases. Of these 9%, several diagnoses applied to some dogs. Incomplete housebreaking was the most frequent diagnosis (84%), followed by separation anxiety (39%). House soiling occurred in 31% of dogs with separation anxiety. Owner feedback, via a questionnaire 6 months later, determined that 81% of dogs with incomplete housebreaking and 85% with SRBP improved after treatment. Separation anxiety was treated with behavioural therapy and the tricyclic antidepressant, amitriptyline.

One third of cases were lost to follow up, this may have produced biased results as owners whose dogs did not improve after treatment may have declined follow up. Mature dogs, aged over 25 months, were the most frequently referrals (43%), indicating this age at a high risk of developing behavioural problems. Older age and separation anxiety was significantly associated. Study 3 references literature reporting house soiling occurring frequently in dogs over 10 years old and suggests Canine Cognitive Dysfunction as one explanation. As only 1 dog in study 3 was over 10 years old, further research could investigate whether dogs older than 10 years are affected by this disorder and/or separation anxiety.

Study 1 concluded a dose of 2.1 to 4mg/kg of clomipramine was effective in combination with behavioural therapy in treating SRBP. Study 2 concluded lower doses were no more effective than behavioural modification incorporating owner assertiveness alone. Study 3 highlighted incomplete housebreaking as an important differential diagnosis to SRBP in house soiling dogs. Treatment using behavioural therapy and amitriptyline appeared to be effective. It is evident that tricyclic antidepressants have a place in conjunction with behavioural therapy when treating SRBP.

### **References:**

- 1) Holmes, R. (1993) Separation Anxiety and Grieving by Dogs and Cats. Animal Behaviour Proceedings, Post Graduate Committee in Veterinary Science, University of Sydney.
- 2) Petit, S., Pageat, P., Heude, B., Beata, C., Dehasse, J. (1999) Efficacy of clomipramine in the treatment of separation anxiety in dogs: clinical trial. *Revue Med Vet.* 150, 2, 133-140.

3) Podberscek, A.L., Hsu, Y. and Serpell, J.A. (1999) Evaluation of clomipramine as an adjunct to behavioural therapy in the treatment of separation-related problems in dogs. *Vet Rec.* 145, 365-369.

4) Yeon, S.C., Erb, H.N. and Houpt, K.A. (1999) A Retrospective Study of Canine House Soiling: Diagnosis and Treatment. *J Am Anim Hosp Assoc.* 35, 101-6.

**Further Reading:**

*Novartis, Clomicalm Animal Behaviour Resource Manual for Veterinary Clinics.* Novartis Animal Health Australasia Pty Ltd., Wentworthville N.S.W.