Echocardiographic Effects of Oral Trazodone on Left Ventricular Function in Healthy Dogs

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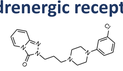
INTRODUCTION

Trazodone is commonly prescribed for extra-label use as a short-acting, oral medication in dogs for anxiety, post-surgical confinement, and **mild sedation for veterinary visits.**

Antagonizes **5-HT2A serotonin receptor** and **α1 adrenergic receptor** → Prevents serotonin reuptake → Mild sedation, anxiolysis



Potential to facilitate echocardiography in anxious dogs

- Well tolerated in dogs
- Common adverse effects are mild
- Cost effective
- Increased patient compliance = improved diagnostic accuracy and safety

No study has investigated the echocardiographic effects of oral trazodone in dogs. These effects must be determined to ensure cardiology diagnostic accuracy and further evaluate trazodone's safety.

SPECIFIC AIMS

#1	Determine if trazodone has a significant effect on echocardiographic measurements of **left ventricular size and function**.
#2	Assess whether trazodone changes **patient behavioral parameters**.
#3	Obtain physical exam findings, blood pressure measurements, and ECG data to evaluate for **adverse effects of trazodone**.

HYPOTHESES

Oral trazodone will have no significant effect on left ventricular size or function measurements. Oral trazodone will increase patient compliance and sedation scores and significantly decrease patient stress and aggression scores. Oral trazodone will significantly increase QT interval and significantly decrease blood pressure and heart rate.

MATERIALS AND METHODS

A prospective, double-blinded, placebo-controlled, crossover study was conducted with 15 client-owned, healthy, adult dogs with mild vet-related anxiety.

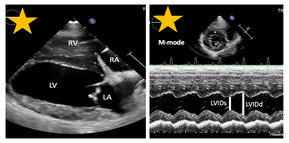
22 dogs were screened, 18 were enrolled, and 3 were excluded due to mild mitral valve regurgitation (n = 15).

Each dog completed 2 study visits after receiving either trazodone 9-12 mg/kg or placebo orally 90 minutes before departure to the VMTH. Owners and evaluators were blinded to the contents of the capsules.

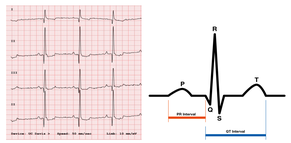
Blood pressure, echocardiographic, electrocardiographic, and behavioral parameters will be compared using one-way ANOVA between trazodone and placebo visits.

Doppler Blood Pressure
- Systolic Blood Pressure (mmHg)

Echocardiogram
- ★ LV function
- LV size
- LA size



5-minute Electrocardiography
- PR interval
- QT interval
- Heart rate



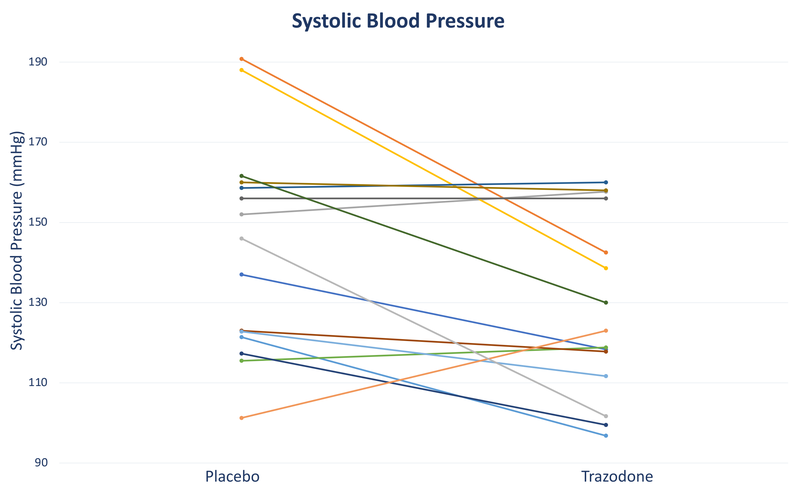
Holter Monitor (24-hour ECG)
- QT interval
- Arrhythmias
- Heart Rate variability

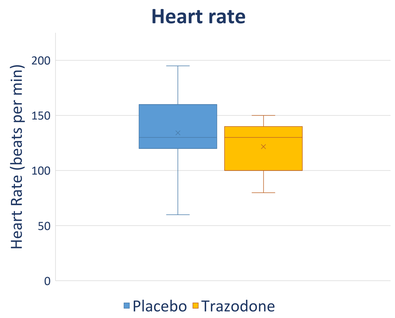
Behavior Analysis
- Stress
- Compliance
- Aggression
- Sedation

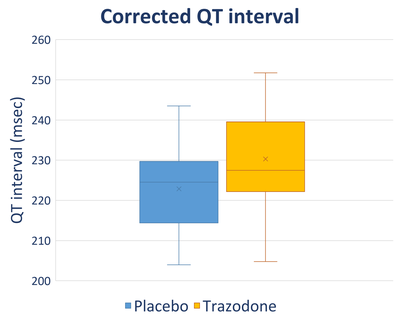
Owner and handler surveys

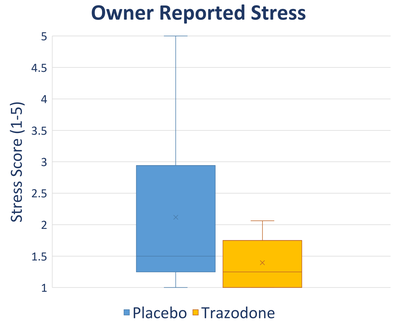
Stress analysis of videos

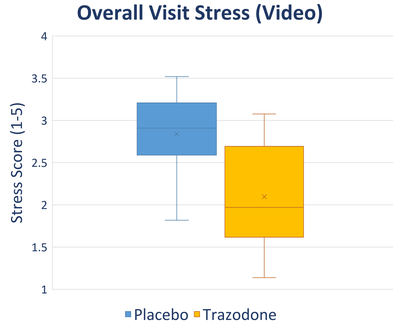
RESULTS











- **Sleepiness** (12/15), **decreased appetite** (4/15), and **ataxia** (1/15) were the only owner-reported adverse effects of trazodone.
- Means for **heart rate** and **blood pressure** were decreased with trazodone.
- No **PR interval** changes or **arrhythmias** were seen on 5-minute ECGs with trazodone.
- Mean for corrected **QT interval** (Van de Water formula) was increased with trazodone.
- Means for owner-reported **stress** and overall visit **stress** were decreased with trazodone. Means for handler-reported **compliance** and **sedation** were increased with trazodone.

CONCLUSIONS

- Decreased systolic blood pressure with trazodone may be important to note when assessing these parameters clinically.
- There is no evidence that trazodone causes PR interval prolongation or arrhythmias on 5-minute ECG, but full Holter analysis is still pending.
- QT interval prolongation may occur with the use of trazodone at 9-12 mg/kg PO.
- Lowered patient stress, increased patient compliance, and sedation allow for improved ability to complete diagnostics, improved handler safety, and improved patient welfare. Thus, trazodone's effects on behavior should be useful for echocardiography and other cardiology diagnostics.
- This study provides further evidence that trazodone's common adverse effects are mild (sleepiness, decreased appetite, and ataxia).
- Holter analysis, echocardiographic data, and statistical testing are still pending.

ACKNOWLEGEMENTS AND REFERENCES

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CAH

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