

# Effect of atenolol on heart rate, arrhythmias, blood pressure, and dynamic left ventricular outflow tract obstruction in cats with subclinical hypertrophic cardiomyopathy - PubMed

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### Abstract

**Objective:** To investigate the negative chronotropic, antiarrhythmic, and obstruction-relieving effects of atenolol in cats with subclinical hypertrophic cardiomyopathy (HCM).

**Animals:** Seventeen cats with HCM.

**Methods:** Results for echocardiography, electrocardiography, Doppler blood pressure, and 24 h Holter monitoring were compared in cats before and 2-4 weeks after atenolol therapy (6.25-12.5 mg PO q 12 h).

**Results:** The left ventricular outflow tract maximum velocity (LVOT V<sub>max</sub>) decreased after atenolol administration (mean V<sub>max</sub> pre-treatment 3.3 m/s ± 1.8 m/s; post-treatment 1.6 m/s ± 1.0 m/s, p < 0.0001). Heart rate (HR) decreased after atenolol for all HR modalities. The total number of

ventricular origin complexes (TotVent) and ventricular premature complexes (VPCs) decreased after atenolol. The VPCs decreased from a geometric mean of 61 complexes/24 h (range, 11-620 complexes/24 h) to 15 complexes/24 h (range, 1-1625 complexes/24 h) ( $p < 0.0001$ ). Murmur grade decreased after atenolol from a median grade of 3/6 to 2/6 ( $p < 0.0001$ ). The systolic blood pressure did not change (mean pre-treatment 130 mmHg  $\pm$  16 mmHg, mean post-treatment 123 mmHg  $\pm$  20 mmHg,  $p = 0.2$ ).

**Conclusion:** Atenolol decreases HR, murmur grade, and LVOT obstruction, and to a lesser degree, frequency of ventricular ectopy, in cats with subclinical HCM. Further studies are needed to determine if sudden cardiac death or long-term outcome is influenced by atenolol administration.

**Keywords:** Beta blocker; Echocardiography; Feline; Holter monitor.

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