

# Canine Mitral Valve Disease

## ACVIM Staging & Management Quick Reference



PREVALENCE	PROGRESSION	CHF RISK
75% of canine heart disease 10% of dogs in GP	3-5 years from B1→CHF Slow with acute exacerbations	25-30% of MMVD dogs progress to CHF

STAGE	DEFINITION	DIAGNOSTICS	TREATMENT
<b>A</b> At Risk	Predisposed breed (CKCS, Dachshund, Poodle) No murmur, no disease	<ul style="list-style-type: none"> <li>Physical exam annually</li> <li>Client education</li> <li>No echo required</li> </ul>	<b>No treatment indicated</b> <ul style="list-style-type: none"> <li>Breeder screening (4-5y murmur-free)</li> <li>Monitor for murmur development</li> </ul>
<b>B1</b> Preclinical	Murmur present No cardiac enlargement LA:Ao <1.6, LVIDdN <1.7	<ul style="list-style-type: none"> <li>Thoracic radiographs</li> <li>Echo (baseline ideal)</li> <li>VHS &amp; VLAS tracking</li> <li>Blood pressure</li> </ul>	<b>No treatment indicated</b> <ul style="list-style-type: none"> <li>Monitor annually</li> <li>Teach RRR monitoring</li> <li>Control HTN if present</li> </ul>
<b>B2</b> Preclinical Enlarged	<b>EPIC Criteria:</b> Murmur ≥3/6 VHS >10.5 (breed-specific) LA:Ao ≥1.6 AND LVIDdN ≥1.7	<ul style="list-style-type: none"> <li>Echo recommended</li> <li>Serial VHS/VLAS q6-12mo</li> <li>Track rate of change</li> <li>Blood pressure</li> </ul>	<b>START PIMOBENDAN</b> <ul style="list-style-type: none"> <li>0.25-0.3 mg/kg PO q12h</li> <li>± ACE inhibitor (controversial)</li> <li>Intensify RRR monitoring</li> </ul>
<b>C</b> Clinical CHF	Current or prior CHF Pulmonary edema Dyspnea, tachypnea Cough (± cardiogenic)	<ul style="list-style-type: none"> <li>Thoracic rads (edema)</li> <li>T-FAST for B-lines</li> <li>Renal panel baseline</li> <li>Blood pressure</li> </ul>	<b>ACUTE:</b> IV furosemide, O <sub>2</sub> , sedation <b>CHRONIC:</b> Furosemide/Torseamide <ul style="list-style-type: none"> <li>Pimo 0.25-0.3 mg/kg q12h</li> <li>ACEi + Spironolactone ± Amlodipine</li> </ul>
<b>D</b> Refractory	CHF refractory to standard therapy Requires >8 mg/kg/day furosemide + standard meds	<ul style="list-style-type: none"> <li>Monitor electrolytes</li> <li>Watch for hypochloremia</li> <li>Assess for PH</li> <li>Consider surgery eval</li> </ul>	<b>Optimize all therapies:</b> <ul style="list-style-type: none"> <li>Switch to Torsemide • ↑ Pimo to 0.3</li> <li>Add amlodipine • Supplement K<sup>+</sup>/Cl<sup>-</sup></li> <li>Periodic abdominocentesis</li> </ul>

RADIOGRAPHIC THRESHOLDS	
VHS (general cutoff)	≤10.5 vertebrae
VHS (high certainty B2)	≥11.5 vertebrae
VLAS normal	<2.3 vertebrae
VLAS definite LA enlargement	≥3.0 vertebrae

ECHO THRESHOLDS (EPIC)	
LA:Ao (B2 cutoff)	≥1.6
LVIDdN (B2 cutoff)	≥1.7
LA:Ao severe enlargement	≥2.0

MONITORING PARAMETERS	
Resting Respiratory Rate	< 30 bpm (normal ~20)
VHS/VLAS change	↑ ~1 year before CHF
Renal panel	Discharge, 1wk, q3-4mo
Creatinine (30% ↑)	Consider dose adjustment
Blood pressure	q6-12mo; treat if >160

SURVIVAL TIMES	
B1 → CHF onset	~3-5 years (median)
B2 with Pimo → CHF	~15mo longer vs placebo
Stage C (treated)	~12 months median
Stage D	Poor; weeks to months

### KEY CLINICAL PEARLS

**• Pimobendan in B2:** Only drug with strong evidence to delay CHF onset (~15 months benefit). Start when EPIC criteria met. **• ACE inhibitors in B2:** Controversial. Evidence mixed. Most beneficial in late B2 or with concurrent hypertension. **• Rate of change matters:** Rapidly increasing VHS/VLAS predicts impending CHF within ~1 year. **• Cough ≠ CHF:** Cough in MVD often from airway compression/collapse. Use RRR, not cough, to detect CHF. **• Anesthetic risk:** B1 dogs = minimal risk. B2+ requires careful protocol; avoid alpha-2 agonists (↑ afterload → ↑ MR). **• Poor prognostic indicators:** Hyponatremia, hypochloremia, azotemia at presentation signal worse outcomes.

Reference: ACVIM Consensus Statement (2019) | © VetOnIt CE | vetonitce.org

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