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A Team Approach to Hypertrophic Cardiomyopathy in Cats

What Is Hypertrophic Cardiomyopathy?

Feline hypertrophic cardiomyopathy (HCM) is the most common cardiac disease in cats. It is defined by concentric thickening of the left ventricular wall in the absence of another cardiac or systemic disease expected to cause that degree of hypertrophy.[1] Other disorders such as hyperthyroidism and acromegaly can also result in heart enlargement, but these are not classified as HCM. Cats with HCM instead have abnormal cardiac myocytes that are arranged in a state of disarray and do not function normally.

CHF = congestive heart failure
HCM = hypertrophic cardiomyopathy

Many cats with HCM show no outward signs of disease in the early (ie, subclinical) stages, even though changes within the heart are already present. Because of this, the condition may go unnoticed until it progresses to cause clinical disease. When clinical signs of disease do develop, they most often appear in adulthood, although some cats can develop clinical signs of HCM as early as 6 months of age.[1]

The Impacts of Hypertrophic Cardiomyopathy

The estimated prevalence of HCM in the cat population is ≈15%.[1-3] However, the risk for developing HCM is increased in some purebred cats due to genetic factors.[4,5] Predisposed breeds include ragdolls, Maine coons, American shorthairs, British shorthairs, Bengals, Persians, Siberians, and sphynxes.[1]

Most cats with HCM have subclinical disease; however, this disease can have serious impacts as it progresses in severity.[1] Thickening of the left ventricular wall can compromise myocardial blood flow, leading to cardiomyocyte death and fibrous changes within the ventricular wall.[1] These fibrous changes cause stiffening of the ventricular wall, resulting in diastolic dysfunction and left atrial enlargement. Over time, these changes can contribute to left ventricular outflow obstruction, increased pulmonary venous pressure, pulmonary edema, and pleural effusion, resulting in left heart failure or congestive heart failure (CHF).

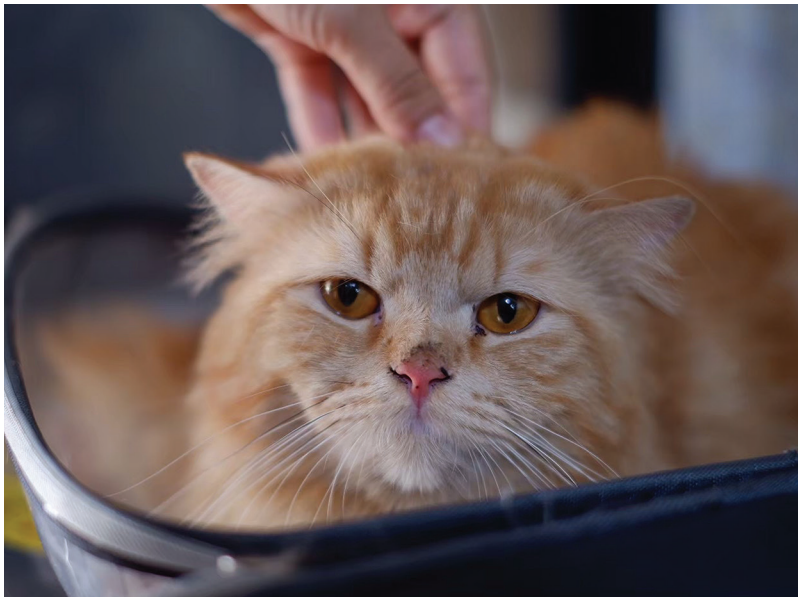
In addition to these progressive changes, HCM is associated with an increased risk for thromboembolic disease and sudden death.[6] The prognosis for HCM is highly variable, with some cats dying shortly after diagnosis and others living a normal lifespan without ever showing clinical consequences of the disease.

Diagnosis of Hypertrophic Cardiomyopathy

Most cases of HCM are subclinical, and therefore, by definition, these patients show no clinical signs. This can make diagnosing the condition in the subclinical phase a challenge.

Some cats with HCM will have a heart murmur. However, a murmur is not diagnostic for HCM and not all cats with HCM have a heart murmur. In a study of 103 apparently healthy cats, a heart murmur had a sensitivity of 31% and specificity of 87% for the diagnosis of cardiomyopathy.[3] Therefore, an auscultable murmur makes it more likely that a cat has HCM, but it should not be regarded as a definitive or sensitive diagnostic indicator. Additional screening tests may include electrocardiography and N-terminal pro-brain natriuretic peptide (NT-proBNP) testing. A variety of arrythmias can occur in cats with HCM, and electrocardiography may reveal supraventricular premature complexes, ventricular premature complexes, and ventricular tachycardia.[1] NT-proBNP is often elevated in severe disease, especially in patients with CHF, but it may be normal in cases of more mild subclinical disease.[6]

> **“Once HCM progresses past the subclinical stage, CHF, aortic thromboembolism, and sudden death are the 3 most common possible clinical outcomes.**



Veterinarians may be tempted to utilize thoracic radiography for HCM screening due to the availability of radiography in most practices; however, the sensitivity of radiography in the diagnosis of mild or subclinical HCM is low and it is therefore not a recommended screening test.[7]

Echocardiography is regarded as the gold standard for HCM screening and for obtaining a definitive diagnosis.[1] Characteristic findings include marked thickening of the left ventricular wall, severely enlarged papillary muscles, systolic anterior motion of the mitral valve, and moderate to severe left atrial enlargement. Beyond establishing a diagnosis, echocardiography also offers important prognostic insights.[8]

Once HCM progresses past the subclinical stage, CHF, aortic thromboembolism, and sudden death are the 3 most common possible clinical outcomes.[1,6] In patients that develop CHF, clinical signs typically include tachypnea and dyspnea. Coughing is rare in cats with CHF, unlike in dogs. Pulmonary edema and/or pleural effusion may be observed on thoracic radiography. Cats that develop thromboembolic disease are often presented for acute pelvic limb paresis/paralysis. They are painful in the affected limb(s),

with weak or absent femoral pulse(s), paw pads that are cool to the touch, and pallor of the paw pads.

Management of Subclinical Hypertrophic Cardiomyopathy

Historically, management options for subclinical HCM have been limited to reducing potentially life-threatening complications such as thromboembolism and arrythmias. For cats with HCM that have moderate to severe left atrial enlargement, clopidogrel is an anticogulant that is recommended in an effort to reduce the risk for clot formation.[1] Drugs such as atenolol should be considered in cats with ventricular ectopy secondary to HCM.[6]

In March of 2025, the US Food and Drug Administration conditionally approved Felycin®-CA1 (sirolimus delayed-release tablets) for the management of ventricular hypertrophy in cats with subclinical HCM. Unlike historic management options, this drug targets the underlying disease process of HCM.

In a 6-month trial involving 43 client-owned cats with HCM, treatment with Felycin-CA1 resulted in a statistically significant reduction in left ventricular wall thickness as compared with cats receiving placebo treatment.[9] In addition, there was no significant difference in adverse events between cats receiving the treatment and cats receiving placebo.[9] These findings indicate that treatment may prevent or delay progressive left ventricular hypertrophy in cats with HCM.

Felycin-CA1 is administered at a dose of 0.3 mg/kg orally once weekly.[10] Contraindications to the use of Felycin-CA1 include diabetes mellitus, liver disease, aortic thromboembolism, and CHF.[10] In addition, this medication should be used with caution in conjunction with drugs that inhibit cytochrome P-450 3A4 or P-glycoprotein and in cats with multidrug sensitivity gene *ABCB1* (formerly known as *MDR1*) mutation.[10]

IV fluids should be used judiciously in cats with HCM, as excess fluid administration can tip a cat with subclinical disease into heart failure.[1] When HCM progresses to CHF or is associated with an acute thromboembolic event, targeted therapy should be tailored to the individual patient.

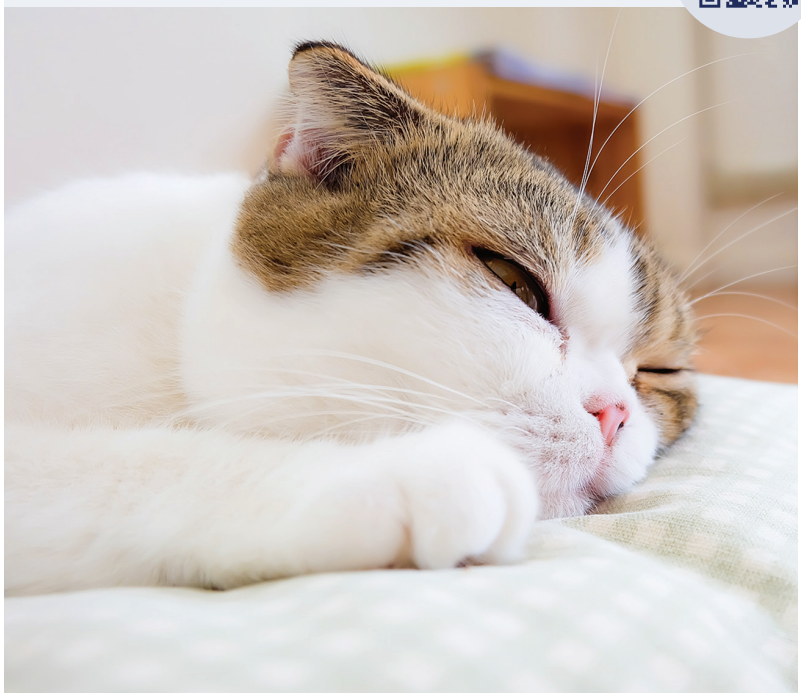
CHF = congestive heart failure

HCM = hypertrophic cardiomyopathy

NT-proBNP = N-terminal pro-brain natriuretic peptide

Want to learn more about feline hypertrophic cardiomyopathy and Felycin®-CA1?

Check out this companion article, **Subclinical Hypertrophic Cardiomyopathy: How Can This Condition Be Managed?** Scan the QR code or visit **cliniciansbrief.com/article/subclinical-hypertrophic-cardiomyopathy-how-can-condition-be-managed** to read the article.



Team Roles in the Management of Feline Hypertrophic Cardiomyopathy

Optimize your approach to HCM with a team-based approach, ensuring patients and clients receive the best possible HCM education, screening, and management.

> **Felycin®-CA1 may prevent or delay progressive left ventricular hypertrophy in cats with subclinical HCM and lead to improved outcomes.**

Client Service Representative

- Emphasize the value of routine wellness visits, as regular screening is key to detecting subclinical feline HCM.
- Ensure prompt assessment of cats when clients call with potential cardiac concerns, encouraging owners to seek care immediately and working with the veterinary team to ensure the patient is triaged upon arrival.
- Present clients with financial options to facilitate the diagnosis and management of HCM.
- Schedule rechecks as recommended by the veterinarian and help communicate the importance of rechecks to clients.
- Express empathy for clients whose pets may have received a diagnosis of cardiac disease.
- Facilitate referrals to a veterinary cardiologist as requested by the veterinarian.
- Place follow-up calls as recommended by the veterinarian.

Veterinary Assistant/ Technician

- Obtain a thorough patient history for all feline patients.
- Recognize signs of heart disease (eg, dyspnea, acute pelvic limb paralysis) in the patient history and on initial triage examination. Ensure that patients in distress are seen promptly by the veterinarian.
- Perform in-house diagnostic tests as requested by the veterinarian.
- Present diagnostic care plans created by the veterinarian, explaining the benefits and value of these diagnostic tests.
- Be prepared to discuss the benefits of HCM screening, including early diagnosis and subsequent management and monitoring as needed.
- Facilitate referrals to a veterinary cardiologist as requested by the veterinarian.
- Express empathy for clients whose pets have been diagnosed with cardiac disease.
- Help answer client questions about veterinarian-recommended treatments, discussing both expected benefits and potential side effects of treatment.
- Provide clients with relevant educational materials on HCM.
- Schedule rechecks as recommended by the veterinarian.
- Refill medications as recommended by the veterinarian.
- Place follow-up calls as recommended by the veterinarian.

Veterinarian

- Identify risk factors for HCM in patient

signalment, history, and physical examination.
- Recognize breeds that are at increased risk for HCM, and discuss this risk with clients.
- Develop practice-wide HCM screening protocols, allowing for a consistent approach across the entire practice. Determine whether the practice will recommend HCM screening for high-risk breeds, cats with heart murmurs, all domestic cats, or some other portion of the feline patient population.
- Explain the benefits of HCM screening to clients, including early diagnosis and subsequent management and monitoring as needed.
- Perform careful auscultation for heart murmurs and arrhythmias, recognizing that these abnormalities are not diagnostic for HCM but may indicate an increased risk.
- Refer patients to a cardiologist for echocardiography and/or offer in-house screening.
- Prescribe Felycin®-CA1 for cats with subclinical HCM, when appropriate.
- Educate clients about the benefits of Felycin-CA1 and how to use this medication appropriately.
- Provide emergency care for patients experiencing CHF and/or thromboembolic disease.
- Express empathy for clients whose cats have been diagnosed with HCM.
- Develop and/or distribute relevant educational materials on HCM.
- Educate clients about the potential sequelae of HCM, including signs of CHF and/or thromboembolism.
- Schedule recheck visits and make follow-up calls to monitor the patient's response to therapy.
- Raise awareness and educate pet owners about feline heart disease through the practice newsletter, social media channels, etc.

Conclusion

HCM is the most common cardiac condition in cats, affecting ≈15% of domestic cats and higher percentages of predisposed breeds.[1-3] Although most cases of HCM are subclinical, this condition can progress to cause CHF, thromboembolism, or even sudden death. Fortunately, a conditionally approved management option is available to target this disease. Felycin-CA1 may prevent or delay progressive left ventricular hypertrophy in cats with HCM and lead to improved outcomes.

A team-based approach can help the veterinary team maximize the benefits associated with the early diagnosis and management of HCM. There is a role for every team member in HCM care, from the client service representative to the veterinarian. Each member of the team can help identify at-risk patients, promote the value of screenings, and facilitate effective treatment, ensuring the best possible outcomes for patients while ensuring clients feel supported in their cat's care.

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CHF = congestive heart failure
HCM = hypertrophic cardiomyopathy

For a downloadable, comprehensive handout to share with pet owners on the diagnosis and management of HCM in their cat, scan the QR code or visit **cliniciansbrief.com/article/pet-owner-handout-what-hcm-diagnosis-means-for-your-cat**

The diagnosis you dread now has a solution.

Meet HCM's match.

Felycin®-CA1 (sirolimus delayed-release tablets) is the first FDA conditionally approved drug for the management of ventricular hypertrophy in cats with subclinical hypertrophic cardiomyopathy (HCM). Manage the disease and give hope to owners of cats with HCM.

Fight back with Felycin®-CA1.

felycin®-CA1
(sirolimus delayed-release tablets)

See full prescribing information in this publication for additional information.

Fight back with Felycin®-CA1.

(sirolimus delayed-release tablets)

1 in 7 cats has HCM.[1,2]

But now there's Felycin®-CA1, the first FDA conditionally approved drug for the management of ventricular hypertrophy in cats with subclinical hypertrophic cardiomyopathy (HCM).

Join the Fight
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See full prescribing information in this publication for additional information.

felycin®-CA1
(sirolimus delayed-release tablets)

FELYCIN®-CA1 (sirolimus delayed-release tablets)
Cardiac drug for oral use in cats only.
Conditionally approved by FDA pending a full demonstration of effectiveness under application number 141-604. It is a violation of federal law to use this product other than as directed in the labeling. For complete prescribing information, see full package insert. **Caution:** Federal law restricts this drug to use by or on the order of a licensed veterinarian. **Indication:** for the management of ventricular hypertrophy in cats with subclinical hypertrophic cardiomyopathy (HCM). **Dosage and Administration:** Administer Felycin-CA1 at a target dose of 0.3 mg/kg orally once weekly. Tablets should be swallowed whole and not chewed. Do not split or crush tablets. Felycin-CA1 should be administered with a meal. Cats weighing less than 2.5 kg cannot be accurately dosed. **Contraindications:** Felycin-CA1 should not be used in cats with diabetes mellitus. Discontinue immediately if a cat receiving Felycin-CA1 is diagnosed with diabetes mellitus. The administration of Felycin-CA1 to a cat that developed diabetes mellitus was associated with the development of diabetic ketoacidosis and death. Do not administer in cats with pre-existing liver disease. **User Safety Warnings:** Not for human use. Keep out of reach of children. Contact a physician in case of accidental ingestion by humans. Pregnant and breastfeeding women should avoid contact with Felycin-CA1. People with known hypersensitivity to sirolimus should administer Felycin-CA1 with caution. **Animal Safety Warnings:** Administration of Felycin-CA1 with drugs that inhibit cytochrome P-450 3A4 or P-glycoprotein, such as calcium channel blockers, amiodarone, azoles, or cyclosporine, may increase risk for toxicity. Use caution when administering in cats with the MDR1 mutation or when administering concomitantly with another P-gp substrate. Treatment with Felycin-CA1 could impact the cat's ability to mount an adequate immune response to vaccinations. Concurrent administration of Felycin-CA1 did not impact the cat's ability to mount an adequate immune response to a killed rabies vaccine. The impact of Felycin-CA1 for FHV-1, FCV, FPV, and FeLV has not been evaluated. Keep Felcyin-CA1 in a secure location out of reach of dogs, cats, and other animals to prevent accidental ingestion or overdose. **Precautions:** For use only in otherwise healthy cats with subclinical HCM in the absence of other causes of compensatory myocardial hypertrophy (e.g. systemic hypertension), current or historic symptoms of congestive heart failure, arterial thromboembolism, and severe LV outflow tract obstruction. Treatment with Felycin-CA1 has been associated with the elevation of the transaminase enzymes, which include alanine aminotransferase (ALT) and aspartate aminotransferase (AST). The use of Felycin-CA1 in cats with viral disease like feline viral rhinotracheitis has not been evaluated. The safety and effectiveness of Felycin-CA1 has not been evaluated in cats with other cardiomyopathy phenotypes, in cats receiving beta blockers or corticosteroids, in cats with kidney disease, hyperthyroidism, or other significant systemic disease. The effectiveness of Felycin-CA1 has not been evaluated in sexually intact cats, therefore, should not be used in animals intended for breeding. **Adverse Reactions:** In a well-controlled pilot field study, 43 cats with subclinical HCM were administered either the label dose of Felycin-CA1 (0.3 mg/kg once weekly), twice the label dose (0.6 mg/kg once weekly), or a placebo control tablet and followed for 180 days or until removal from the study. The most frequently observed adverse reactions were cardiovascular in nature, relating to the progression of HCM, and included arrhythmia, congestive heart failure, syncope, and pericardial effusion. Other adverse reactions were lethargy, vomiting, diarrhea, and inappetence. **Clinical Pharmacology:** Sirolimus is an immunosuppressant that targets and inhibits the mammalian target of rapamycin C1 (mTORC1) protein complex, a central regulator of cell growth and nutrient response. Studies in rodent models suggest mTOR inhibition by sirolimus attenuates cardiac hypertrophy by promoting autophagy, attenuating oxidative stress and blocking proinflammatory responses, thereby resulting in an improvement in cardiac function in rodents. **Reasonable Expectation of Effectiveness:** This product is conditionally approved by FDA pending a full demonstration of effectiveness. **To obtain full product information for Felycin-CA1 please call 1-800-874-9764.**
Manufactured for: PRN™ Pharmacal, Pensacola, FL 32514
PRN™ is a trademark of Pegasus Laboratories, Inc.

Dosage and Administration: For use in cats only. The total recommended dosage for Felycin-CA1 is 0.3 mg/kg once per week, dosed in conjunction with a meal. **Storage:** Store at 20-25°C (68-77°F).
WARNINGS: NOT FOR USE IN HUMANS. KEEP THIS AND ALL DRUGS OUT OF REACH OF CHILDREN.

4-2025