

Mind the Gap: From Consensus Guidance to Clinical Practice in Canine Immune-Mediated Haemolytic Anaemia

A Case-Informed Clinical Governance Review

John Tosh, BSc (Hons)

Genetics, University College London

Independent researcher and editor, IMHA Toolkit

October 2026

STATUS AND SCOPE

This is an independent working paper. It has not been peer reviewed and does not constitute a veterinary guideline, expert witness report, legal opinion or substitute for professional veterinary judgement. It uses one canine IMHA case to examine how published evidence and consensus recommendations may be translated into first-opinion practice. A single case cannot establish the frequency of a practice gap, causation at population level, or the superiority of any particular treatment regimen.

Abstract

Background: Canine immune-mediated haemolytic anaemia (IMHA) is associated with substantial morbidity and mortality, with thrombotic disease recognised as an important complication. In 2019, the American College of Veterinary Internal Medicine (ACVIM) published consensus statements addressing diagnosis and treatment, including immunosuppression, tapering, treatment escalation and thromboprophylaxis. The existence of guidance, however, does not itself ensure consistent implementation in individual cases.

Case-informed review: This paper examines the clinical course of a small, elderly dog treated for IMHA in UK first-opinion practice in 2025. The dog received prolonged prednisolone treatment, no recorded thromboprophylaxis, and no steroid-sparing adjunct before referral. Haematological indices improved, while progressive weight loss, muscle wasting, weakness and other adverse clinical changes developed. Following referral, packed cell volume was 37%, but thoracic computed tomography demonstrated extensive pulmonary thromboembolic disease with severe pulmonary hypertension. The dog subsequently died after an unexpected cardiac arrest.

Evidence context: The case is compared with the 2019 ACVIM treatment consensus and later canine thrombosis literature, including prospective and retrospective studies of rivaroxaban and 2026 clot-waveform data. The review does not infer that any single antithrombotic regimen would necessarily have prevented the outcome. Rather, it highlights the importance of an explicit, documented thromboprophylaxis decision, structured monitoring of corticosteroid burden, timely consideration of adjunctive immunosuppression when indicated, and escalation or referral when clinical deterioration is discordant with haematological response.

Clinical governance implications: The paper proposes practical quality-improvement measures for first-opinion practice: local IMHA checklists, explicit documentation of antithrombotic decisions, treatment-review prompts, case ownership, significant-event review, and referral pathways. These recommendations align with current RCVS expectations that clinical

governance include reflection on critical events, analysis of the evidence base, team communication and changes to practice where indicated.

Conclusion: The principal lesson is not that consensus guidance removes the need for clinical judgement, but that high-risk diseases require systems that make important decisions visible, revisitable and auditable.

1 Introduction

Canine immune-mediated haemolytic anaemia (IMHA) is a serious haematological disorder in which immune-mediated destruction of red blood cells can produce severe anaemia, systemic inflammation and a marked prothrombotic state. Thromboembolic disease is a recognised contributor to morbidity and mortality in affected dogs.

In 2019, the ACVIM published two major consensus statements: one addressing diagnosis in dogs and cats, and a canine-specific statement addressing treatment. The treatment statement recommends initial prednisone or prednisolone at 2–3 mg/kg/day, or 50–60 mg/m²/day in dogs over 25 kg, and sets out principles for adjunctive immunosuppression, glucocorticoid reduction and thromboprophylaxis. It strongly recommends thromboprophylaxis in dogs with IMHA unless severe thrombocytopenia or another clinically important contraindication is present.

Consensus statements are guidance rather than rigid rules. They do not replace examination, case-specific judgement, owner factors or formulary verification. Their practical value nevertheless depends on clinicians recognising when a recommendation applies, documenting decisions to follow or depart from it, monitoring the consequences of treatment, and escalating care when the clinical picture changes.

This paper uses one canine IMHA case as a clinical-governance lens. It does not attempt to prove that a widespread implementation failure exists on the basis of a single patient. Instead, it asks a narrower question: what systems might help a first-opinion practice reduce the chance that important, recognised IMHA risks are omitted or insufficiently revisited during a prolonged course of care?

2 Approach and Source Material

The case timeline was reconstructed from contemporaneous primary-care records, laboratory results, referral-hospital documentation and subsequent clinical-governance review material. The management decisions are compared with the 2019 ACVIM consensus statements and relevant later peer-reviewed literature.

The discussion is deliberately separated into three evidential levels:

- **Case facts:** events and measurements recorded in the contemporaneous clinical record or referral documentation.
- **Published evidence and consensus:** recommendations and observations derived from peer-reviewed literature.
- **Governance interpretation:** proposed lessons and system safeguards. These are quality-improvement suggestions, not claims that one workflow is mandatory in every practice.

No attempt is made to infer professional negligence from deviation from a consensus statement. That is a separate legal and regulatory question requiring the complete record, expert evidence and the appropriate professional framework.

3 Case Summary

3.1 Diagnosis and initial treatment

The patient, Luna, was an approximately 14-year-old female neutered Jack Russell cross who presented in late September 2025 with lethargy, inappetence and anaemia. A direct antiglobulin test was positive and IMHA was diagnosed.

Prednisolone was prescribed at 7.5 mg twice daily. At a recorded body weight of approximately 7.8 kg, this equated to about 1.9 mg/kg/day and exceeded 2 mg/kg/day as body weight subsequently fell. This was close to the lower end of the ACVIM-recommended initial immunosuppressive range.

No thromboprophylactic drug was recorded during the period of primary-care management, and the available record did not document a specific clinical contraindication or an explicit discussion of a decision to withhold thromboprophylaxis.

3.2 Haematological response and clinical deterioration

The packed cell volume (PCV) fell to approximately 14–17% early in the disease course, then improved to approximately 24% on 9 October and 29% on 16 October. Later values fluctuated in the mid-to-high 20s.

At the same time, progressive clinical deterioration was recorded. This included marked weight loss, hindlimb weakness, muscle wasting, panting, shaking, reduced mobility and substantial treatment burden. By 30 October, body weight had fallen to approximately 6.73 kg.

Temporary dose reductions occurred during the course, but high-dose prednisolone was subsequently restored. Questions were raised about steroid-sparing immunosuppressants, including ciclosporin and mycophenolate mofetil, but no adjunctive immunosuppressive agent was introduced before referral.

3.3 Referral and thromboembolic disease

Referral was initiated in early December. At specialist assessment on 10 December 2025, the dog was markedly cachectic and clinically compromised, but the PCV was recorded at 37%, indicating substantial haematological improvement compared with the earlier nadir.

Cardiopulmonary investigation demonstrated severe pulmonary hypertension. Thoracic computed tomography identified extensive intraluminal pulmonary arterial filling defects consistent with major pulmonary thromboembolic disease. Specialist treatment included oxygen and antithrombotic/supportive therapy. The dog subsequently suffered an unexpected cardiac arrest and died.

The referral findings are important because they show a divergence between haematological response and overall clinical outcome: improvement in red-cell parameters did not mean that the patient was free from serious treatment-associated or disease-associated complications.

4 Evidence-Based Clinical Issues

4.1 Thromboprophylaxis should be an explicit decision

The 2019 ACVIM canine treatment consensus strongly recommends thromboprophylaxis for dogs with IMHA unless platelet count is severely reduced (suggested threshold below 30,000/ μ L)

or another contraindication exists. The consensus notes that thrombi in IMHA are often venous and fibrin-rich and suggests that a regimen incorporating an anticoagulant may be preferable, particularly during the early disease period. Anticoagulants may be used alone or with an antiplatelet drug depending on the case; the document does not require a universal monotherapy strategy.

This distinction matters. The governance lesson from the present case is not that one specific drug was guaranteed to prevent death. The stronger, evidence-based point is that thromboprophylaxis was a major treatment decision that should have been actively considered, documented and revisited.

Later studies reinforce both the rationale for thrombosis awareness and the uncertainty around the optimal regimen. A 2016 prospective study of 24 dogs found rivaroxaban to be well tolerated at a median dose of approximately 0.89 mg/kg once daily, but was too small to establish comparative efficacy against clopidogrel plus low-dose aspirin. A 2026 UK retrospective cohort of 34 dogs treated with rivaroxaban reported a median dose of 1.2 mg/kg/day; most dogs also received clopidogrel. Thromboembolic events still occurred and clinically significant gastrointestinal bleeding was observed in a subset, emphasising that thromboprophylaxis is not risk-free and that regimen choice must remain individualised.

A separate 2026 retrospective study of 35 dogs using clot-waveform analysis reported abnormalities consistent with hypercoagulability, adding contemporary evidence that the prothrombotic phenotype remains clinically relevant in canine IMHA.

4.2 Steroid burden should be assessed alongside haematological response

Prednisone or prednisolone remains a core first-line immunosuppressive treatment in canine IMHA. The ACVIM consensus recommends an initial dose of 2–3 mg/kg/day and subsequently reducing the dose when PCV/Hct has remained stable above 30% for approximately two weeks and other indicators of disease activity are improving. It suggests an initial reduction of approximately 25%, with subsequent reductions generally made at intervals of around three weeks if the dog remains stable.

These recommendations are not a rigid timetable. They are a framework for balancing disease control against cumulative glucocorticoid toxicity.

In the present case, a clinically important issue was the divergence between improving haematological parameters and progressive loss of body mass, muscle function and quality of life. Whether each individual sign was attributable to glucocorticoids cannot be established retrospectively from the case record alone. However, severe or anticipated glucocorticoid adverse effects are among the circumstances in which the ACVIM consensus recommends considering a second immunosuppressive agent.

The practical lesson is therefore broader than a dispute over a single dose: treatment review should integrate PCV/Hct, evidence of ongoing haemolysis, weight, muscle condition, mobility, appetite, respiratory signs, infection risk and other adverse effects. A rising PCV should not end that wider assessment.

4.3 Adjunctive immunosuppression is a consideration, not an automatic second step

The ACVIM consensus does not recommend that every dog with IMHA receive two immunosuppressants. It recommends considering an adjunctive drug in defined circumstances, including immediately life-threatening disease, continued substantial PCV/Hct decline during

the first week, ongoing transfusion dependence after approximately seven days, or severe/anticipated glucocorticoid adverse effects.

This is an important correction to simplistic “monotherapy versus dual therapy” framing. The issue is not whether an adjunct should automatically have been added at diagnosis. The case raises a different question: once severe treatment burden and progressive physical deterioration became prominent, was the immunosuppressive strategy sufficiently reassessed, including whether a steroid-sparing agent or specialist input might reduce harm while maintaining disease control?

4.4 Referral is a dynamic decision

Referral criteria are necessarily contextual. Owner preference, finances, geography, patient stability and local expertise all matter. However, the RCVS Code requires veterinary surgeons to work within their competence and refer responsibly, while RCVS clinical-governance guidance emphasises critical reflection, evidence review, communication and learning from unexpected outcomes.

For complex IMHA cases, referral or specialist telephone advice may be particularly valuable when there is discordance between haematological response and overall clinical deterioration, uncertainty about adjunctive immunosuppression, concern about thromboembolic disease, or difficulty balancing treatment efficacy against adverse effects.

5 Clinical Governance: From Guideline to Workflow

The purpose of quality improvement is not to replace judgement with algorithms. It is to make high-consequence decisions less likely to be omitted during busy, fragmented or prolonged care.

RCVS guidance defines clinical governance as a continuing process of reflection, analysis and improvement. It includes keeping up to date, analysing the evidence base, reflecting on critical events, communicating effectively within the team, assessing competence and making changes to practice. RCVS guidance for veterinary leaders also places responsibility on leadership to ensure that systems and protocols support safe practice and that team concerns can be raised and acted upon.

A local IMHA pathway could therefore include the following prompts:

- **At diagnosis:** record whether thromboprophylaxis is being used, and if not, document the reason.
- **At each review:** assess both haematological response and treatment burden, including weight, muscle condition, mobility, appetite, infection concerns and respiratory signs.
- **When adverse effects become clinically important:** explicitly reconsider glucocorticoid dose, adjunctive immunosuppression and specialist advice.
- **When the case trajectory becomes discordant or uncertain:** define who owns the case, who reviews the complete record, and whether referral or specialist discussion is indicated.
- **After a serious adverse outcome:** perform a significant-event review focused on systems, communication and learning rather than blame alone.

These are proposed safeguards, not validated IMHA outcome tools. Their value would need to be assessed through local audit and re-audit.

6 Why a Single Case Still Matters

A single case cannot demonstrate the prevalence of a knowledge-to-action gap across veterinary medicine. It can, however, expose failure modes that are suitable for prospective audit.

This case suggests several auditable questions for first-opinion practices managing canine IMHA:

- What proportion of diagnosed dogs have a documented thromboprophylaxis decision?
- Is there a documented reason when prophylaxis is withheld?
- Are weight and clinically important glucocorticoid adverse effects tracked during treatment?
- Are ACVIM adjunctive-treatment criteria or equivalent local escalation criteria available to clinicians?
- Is responsibility for longitudinal case review clear when several clinicians are involved?
- Is specialist advice sought when the treatment plan becomes uncertain or the patient's clinical and haematological trajectories diverge?

These questions convert a painful individual outcome into measurable quality-improvement targets without assuming that every adverse outcome is preventable or that consensus guidance can remove legitimate clinical uncertainty.

7 Limitations

This paper has several important limitations.

First, it is based on a single retrospective case and cannot establish how frequently similar management patterns occur in primary care. Second, clinical records are necessarily incomplete representations of clinical reasoning and conversations. Third, the author is the dog's owner and the founder of IMHA Toolkit, creating an unavoidable personal perspective; this is disclosed rather than concealed. Fourth, an adverse outcome does not prove that a different management strategy would have produced survival. Thromboprophylaxis reduces risk but does not eliminate thromboembolic disease, and antithrombotic treatment itself carries haemorrhagic risk.

Finally, the 2019 ACVIM treatment consensus remains guidance rather than a legally binding protocol. Its recommendations should be applied in conjunction with current evidence, patient-specific factors and professional judgement.

8 Conclusion

The most important lesson from this case is not that canine IMHA can be reduced to a checklist. It is that a high-risk disease benefits from systems that make important decisions visible and revisitable.

Thromboprophylaxis should be actively considered and documented. Glucocorticoid treatment should be assessed not only by haematological response but also by cumulative adverse effects. Adjunctive immunosuppression should be considered when published criteria or patient-specific treatment burden justify it. Referral should remain a dynamic option when the clinical picture becomes complex, discordant or uncertain.

Consensus guidance cannot replace veterinary judgement. Clinical governance can help ensure that judgement is informed by the evidence, shared across the team and reviewed when the patient changes.

Author statement: John Tosh, BSc (Hons), holds a degree in Genetics from University College London. He is an independent researcher and editor and is not a veterinary surgeon. He founded IMHA Toolkit following Luna's illness and death.

Funding: No external funding was received.

Conflict of interest and perspective: The author was Luna's owner and has pursued clinical-governance review of her treatment. This personal involvement is a material perspective and should be considered when reading the case analysis.

Data availability: The case discussion is based on contemporaneous clinical records, laboratory results, referral documentation and subsequent governance material. The underlying records contain personal and professional information and are not published in full with this working paper.

References

1. Swann JW, Garden OA, Fellman CL, et al. ACVIM consensus statement on the treatment of immune-mediated hemolytic anemia in dogs. *J Vet Intern Med.* 2019;33:1141–1172. doi:10.1111/jvim.15463.
2. Garden OA, Kidd L, Mexas AM, et al. ACVIM consensus statement on the diagnosis of immune-mediated hemolytic anemia in dogs and cats. *J Vet Intern Med.* 2019;33:313–334. doi:10.1111/jvim.15441.
3. Morassi A, Bianco D, Park E, Nakamura RK, White GA. Evaluation of the safety and tolerability of rivaroxaban in dogs with presumed primary immune-mediated hemolytic anemia. *J Vet Emerg Crit Care.* 2016;26:488–494. doi:10.1111/vec.12480.
4. Conway S, Jenkins L, Reeve J. Retrospective evaluation of outcomes in dogs with non-associative immune-mediated haemolytic anaemia treated with rivaroxaban as a sole or adjunctive thromboprophylaxis agent: 34 cases (2018–2024). *J Small Anim Pract.* Published online 16 September 2026. doi:10.1111/jsap.70202.
5. Richter LG, Ludwik TM, Gwynn AD, Rendahl A, Todd JM. Retrospective characterization of clot waveform analysis in canine immune-mediated hemolytic anemia using the turbidimetric ACL-TOP 300 analyzer (2018–2022): 35 cases. *J Vet Emerg Crit Care.* Published online 11 August 2026. doi:10.1111/vec.70145.
6. Royal College of Veterinary Surgeons. Supporting Guidance 6: Clinical governance. Updated 23 June 2020. Accessed October 2026. <https://www.rcvs.org.uk/veterinary-professionals/conduct-and-guidance/supporting-guidance/6-clinical-governance>
7. Royal College of Veterinary Surgeons. Supporting Guidance 17: Veterinary teams and leaders. Updated 7 October 2024. Accessed October 2026. <https://www.rcvs.org.uk/veterinary-professionals/conduct-and-guidance/supporting-guidance/17-veterinary-teams-and-leaders>
8. RCVS Knowledge. Quality Improvement resources and clinical audit guidance. Accessed October 2026. <https://knowledge.rcvs.org.uk/quality-improvement>