



International Journal of Veterinary Sciences and Animal Husbandry



ISSN: 2456-2912

NAAS Rating (2026): 4.61

VET 2026; 11(7): 90-92

© 2026 VET

www.veterinarypaper.com

Received: 25-04-2026

Accepted: 27-05-2026

M Varshini

Postgraduate Student,
Department of Veterinary
Microbiology, College of
Veterinary Science, Sri
Venkateswara Veterinary
University, Tirupati, Andhra
Pradesh, India

Dr. K Lakshmi Kavitha

Associate Professor, Department
of Veterinary Microbiology,
College of Veterinary Science, Sri
Venkateswara Veterinary
University, Tirupati, Andhra
Pradesh, India

Dr. B Sreedevi

Professor and University Head,
Department of Veterinary
Microbiology, College of
Veterinary Science, Sri
Venkateswara Veterinary
University, Tirupati, Andhra
Pradesh, India

Dr. P Ramya

Assistant Professor, Department
of Veterinary Public Health and
Epidemiology, College of
Veterinary Science, Sri
Venkateswara Veterinary
University, Tirupati, Andhra
Pradesh, India

Corresponding Author:

M Varshini

Postgraduate Student,
Department of Veterinary
Microbiology, College of
Veterinary Science, Sri
Venkateswara Veterinary
University, Tirupati, Andhra
Pradesh, India

Conventional diagnosis of cats suspected with effusive feline infectious peritonitis

M Varshini, K Lakshmi Kavitha, B Sreedevi and P Ramya

DOI: <https://www.doi.org/10.22271/veterinary.2026.v11.i7b.3575>

Abstract

Feline infectious peritonitis (FIP) is a fatal systemic disease of cats caused by Feline Infectious Peritonitis Virus (FIPV), in which diagnosis often relies on a combination of clinical, conventional, and laboratory findings. The present study was undertaken to evaluate the diagnostic significance of ascitic fluid analysis in suspected effusive FIP cases. A total of 10 ascitic fluid samples were collected from cats suspected for effusive form of FIP presented to various veterinary polyclinics in and around Tirupati. All ascitic fluid samples were subjected to Rivalta test, and all 10 samples showed positive results, indicating strong suspicion of effusive FIP. Biochemical analysis of ascitic fluid revealed consistent alterations characterized by hyperproteinemia, hypoalbuminemia, hyperglobulinemia, and decreased albumin-to-globulin (A:G) ratio. These findings support the usefulness of conventional biochemical markers as important supportive indicators in the diagnosis of effusive FIP. However, as similar biochemical patterns may also occur in other inflammatory or infectious conditions, definitive confirmation requires further molecular diagnostic methods such as RT-PCR or Realtime PCR. The study highlights the value of combining Rivalta test and biochemical profiling as preliminary diagnostic tools for suspected effusive form of FIP cases.

Keywords: Feline infectious peritonitis virus, effusive form, Rivalta test, biochemical analysis

Introduction

Feline Infectious Peritonitis Virus (FIPV) is a virulent mutated form of Feline coronavirus (FCoV) that causes Feline Infectious Peritonitis (FIP), a severe and often fatal systemic disease in cats. Most feline coronaviruses remain harmless in the intestine as Feline Enteric Corona Virus (FECV), but in some immunocompromised cats the virus mutates into FIPV, gaining the ability to replicate in macrophages and spread throughout the body. This disease is mainly manifested as effusive (wet) form which is characterized by accumulation of straw-coloured protein-rich fluid in abdomen or thorax. Non-effusive (dry) form, characterized by granulomatous lesions in organs such as liver, kidney, eye, and CNS.

Materials and methods

A clean transparent test tube was taken and 8 mL of distilled water was added. One drop of acetic acid was then added to the distilled water and mixed gently to prepare the Rivalta solution. Using a pipette, one drop of ascitic fluid sample was carefully placed onto the surface of the solution. The behaviour of the drop in the solution was then observed.

Ethical matters

Ethical approval for collection and use of clinical samples from suspected feline infectious peritonitis cases was obtained from the Institutional Animal Ethics Committee, College of Veterinary science, SVVU, Tirupati, under approval number 281/go/ReBi/S/2000/CPCSEA/CVSc/TPTY/092/Veterinary Microbiology/2025.

Results: Ten ascitic fluid samples were collected from cats suspected of the effusive form of feline infectious peritonitis based on clinical signs including abdominal distension, dyspnoea,

and anorexia (Figure 1). All collected samples were subjected to Rivalta test, and each sample showed a positive reaction, characterized by the formation of a jellyfish-like precipitate after addition into distilled water containing a drop of acetic acid, suggestive of effusive FIP (Figure-2). Further

biochemical analysis of the ascitic fluid samples revealed consistent abnormalities including hyperproteinemia, hypoalbuminemia, hyperglobulinemia, and a reduced albumin-to-globulin (A:G) ratio. The detailed biochemical findings are presented in the following (Table-1).

Table 1: Biochemical parameters of ascitic fluid samples from cats suspected for effusive feline infectious peritonitis

Sample	Total Protein (g/dL)	Albumin (g/dL)	Globulin (g/dL)	A:G Ratio
A1	8.5	1.6	6.9	0.23
A2	2.9	0.9	2.0	0.45
A3	4.9	1.0	3.9	0.26
A4	5.2	1.2	4.0	0.30
A5	4.8	0.9	3.9	0.23
A6	6.7	1.4	5.3	0.26
A7	6.6	1.3	5.3	0.25
A8	9.0	1.4	7.6	0.18
A9	3.0	1.4	1.6	0.875
A10	3.5	1.2	2.3	0.52



Fig 1 and 2: Collected ascitic fluid sample and Positive Rivalta test

Discussion

In the present study, all ascitic fluid samples collected from cats suspected of effusive feline infectious peritonitis showed positive Rivalta test reactions, characterized by the typical jellyfish-like precipitate formation, indicating the presence of high-protein exudative effusion. Rivalta positivity is considered a valuable supportive diagnostic indicator in effusive FIP [1] because the effusions are rich in proteins and inflammatory mediators resulting from immune-mediated vasculitis.

Biochemical analysis of ascitic fluid samples revealed hyperproteinemia, hypoalbuminemia, hyperglobulinemia [4], and reduced albumin-to-globulin (A:G) ratio. These findings are consistent with the characteristic biochemical profile observed in effusive FIP. Increased total protein and globulin concentrations occur due to chronic inflammatory stimulation and excessive immunoglobulin production, whereas decreased albumin levels may result from impaired hepatic synthesis, vascular leakage, and inflammatory protein redistribution [3].

The reduced A:G ratio observed in this study is an important supportive marker for FIP diagnosis, as ratios below 0.4 are strongly suggestive of the disease in clinically suspected cases [2]. Similar findings have been reported in previous studies, where hyperglobulinemia and low A:G ratio were considered common laboratory abnormalities in cats affected with effusive FIP.

Although these conventional diagnostic findings strongly support suspicion of effusive FIP, similar biochemical alterations may also occur in other chronic inflammatory, infectious, or neoplastic diseases. Therefore, definitive confirmation requires molecular diagnostic techniques such as RT-PCR for accurate detection of feline coronavirus mutations associated with FIPV [4].

The present findings emphasize that Rivalta test combined with biochemical profiling serves as a useful preliminary diagnostic approach in suspected effusive FIP cases, particularly in clinical settings where rapid molecular testing may not be immediately available.

Conclusion: Effusive feline infectious peritonitis can be effectively suspected through conventional diagnostic methods such as clinical examination, Rivalta test, and biochemical analysis of ascitic fluid. In the present study, positive Rivalta reactions along with hyperproteinemia, hypoalbuminemia, hyperglobulinemia, and reduced albumin-to-globulin ratio were consistent supportive indicators of effusive FIP in suspected cats. These findings demonstrate that conventional diagnostic approaches are valuable for preliminary screening and early clinical suspicion of the disease. However, as similar alterations may also occur in other inflammatory conditions, confirmatory molecular diagnostic methods are essential for definitive diagnosis.

Acknowledgement

The authors sincerely acknowledge the support and guidance provided by the College of Veterinary Science, Tirupati, Sri Venkateswara Veterinary University, Andhra Pradesh, for providing laboratory facilities and technical assistance during the study.

Conflict of Interest

There is no conflict of interest

References

1. Fischer Y, Sauter-Louis C, Hartmann K. Diagnostic accuracy of the Rivalta test for feline infectious peritonitis. *Vet Clin Pathol*. 2012;41(4):558-567.
2. Tasker S. Diagnosis of feline infectious peritonitis: update on evidence supporting available tests. *J Feline Med Surg*. 2018;20(3):228-243.
3. Felten S, Hartmann K. Diagnosis of feline infectious peritonitis: a review of the current literature. *Viruses*. 2019;11(11):1068.
4. Thayer V, Gogolski SM, Felten S, Hartmann K, Kennedy M, Olah GA, *et al*. 2022 AAEP/EveryCat feline infectious peritonitis diagnosis guidelines. *J Feline Med Surg*. 2022;24(10):905-921.
5. Pedersen NC. A review of feline infectious peritonitis virus infection: 1963-2008. *J Feline Med Surg*. 2009;11(4):225-258.

How to Cite This Article

Varshini M, Lakshmi Kavitha K, Sreedevi B, Ramya P. Conventional diagnosis of cats suspected with effusive feline infectious peritonitis. *International Journal of Veterinary Sciences and Animal Husbandry*. 2026;11(7):90-92.

Creative Commons (CC) License

This is an open-access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-Share Alike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.