



## Early versus Delayed Hyperimmune Serum Administration in Feline Panleukopenia: A Case Series

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**Abstract:** Feline panleukopenia virus (FPV) is a severe parvoviral infection characterized by enteritis, leukopenia, immunosuppression, and high mortality. Passive immunotherapy with commercial hyperimmune serum is used in clinical practice, but the relevance of administration timing remains poorly documented. This case series describes five cats diagnosed with feline panleukopenia and treated with Feliserin Plus, with evaluation of clinical outcome, antibody response, and hematological evolution. Antibody response was assessed using the qFlash FPV Ab Test, while serial complete blood count examinations were used to monitor leukocyte dynamics. Three cats survived and two died. In all surviving cases, hyperimmune serum was administered during the first day of clinical disease, whereas in non-surviving cases treatment was initiated after 2–3 days. Surviving cats showed hematological stabilization, while non-survivors presented persistent or worsening leukopenia. These preliminary observations suggest that early passive immunotherapy may be associated with a more favorable clinical course, although no causal conclusion can be drawn because of the small number of cases and clinical heterogeneity. The case series emphasizes early diagnosis, rapid therapeutic intervention, and CBC monitoring in feline panleukopenia.

### Introduction

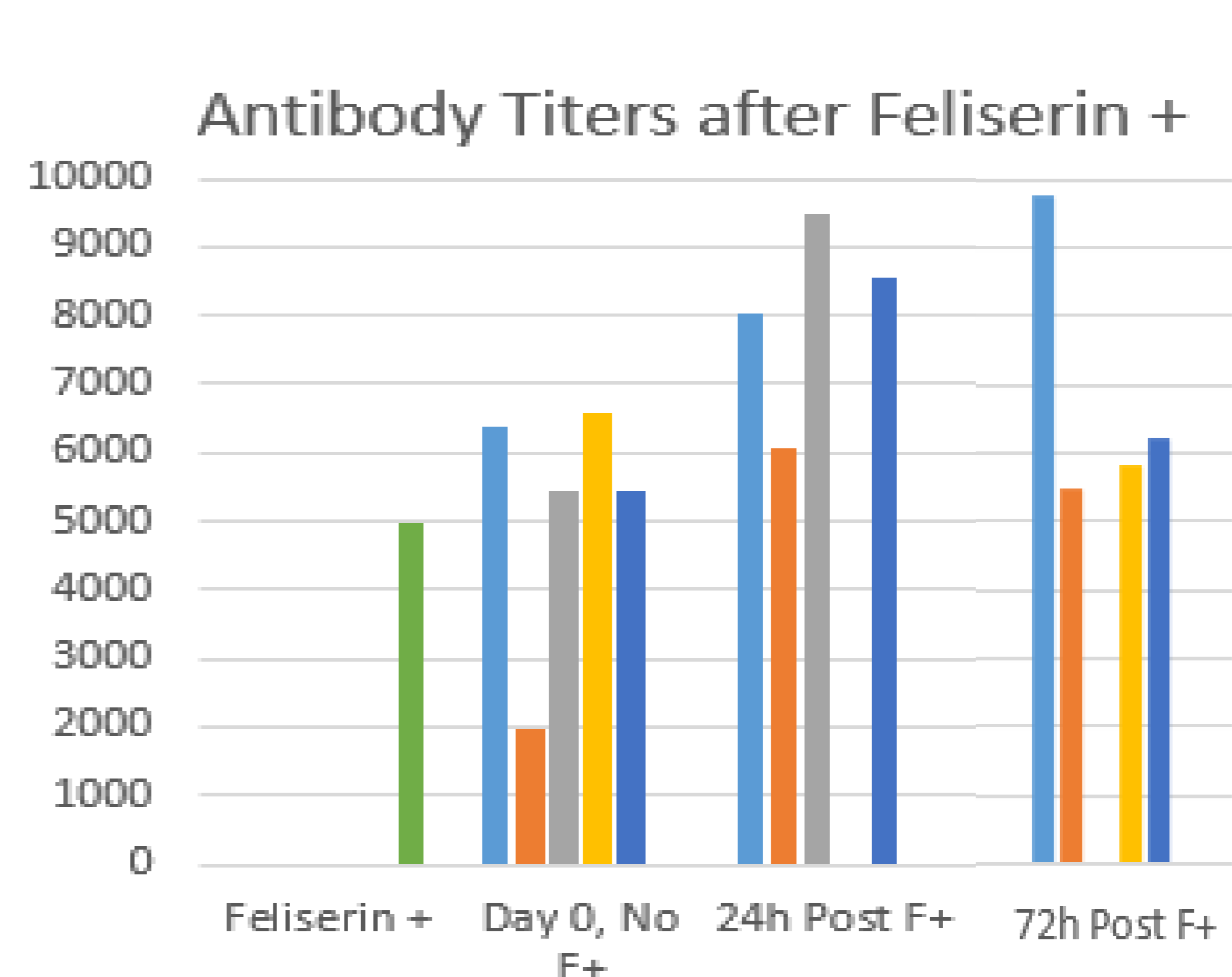
- Feline panleukopenia virus (FPV) is a highly contagious parvoviral pathogen that affects domestic and wild felids, producing severe systemic disease, marked enteritis, profound leukopenia, and high mortality.
- The virus has a strong tropism for rapidly dividing cells, especially intestinal crypt epithelium, lymphoid tissues, and bone marrow precursors, leading to mucosal barrier damage, immunosuppression, and increased risk of secondary complications.
- Supportive therapy remains the main component of clinical management, but passive immunotherapy with commercial hyperimmune serum is used in practice as an additional therapeutic measure, particularly in early stages of infection.
- Despite its clinical use, the therapeutic relevance of hyperimmune serum and the importance of administration timing are still insufficiently documented in naturally infected cats.
- This case series describes five cats diagnosed with feline panleukopenia and treated with Feliserin Plus, focusing on clinical outcome, antibody response, and complete blood count dynamics in relation to early versus delayed serum administration.
- The aim of the study was to evaluate whether the moment of passive immunotherapy administration may be associated with different clinical and hematological evolution patterns in affected cats.

### Material and method

- Five cats diagnosed with feline panleukopenia were included. All presented similar clinical signs: fever, vomiting, diarrhea, apathy, anorexia, and dehydration.
- Diagnosis was confirmed by rapid antigen testing (VetExpert), together with compatible clinical signs and hematological abnormalities.
- All cats received supportive therapy, including fluids, antibiotics, antiemetics, and nutritional support when needed, together with Feliserin Plus hyperimmune serum.
- Antibody response was evaluated using the qFlash FPV Ab Test, while serial CBC examinations (IDEXX Laboratories) monitored leukocyte dynamics during hospitalization.
- Timing of serum administration, hematological evolution, and final outcome were descriptively compared between surviving and non-surviving cats.
- Clinical progression, timing of hyperimmune serum administration, hematological changes, and final outcome were descriptively compared between surviving and non-surviving cats.

### Results and discussions

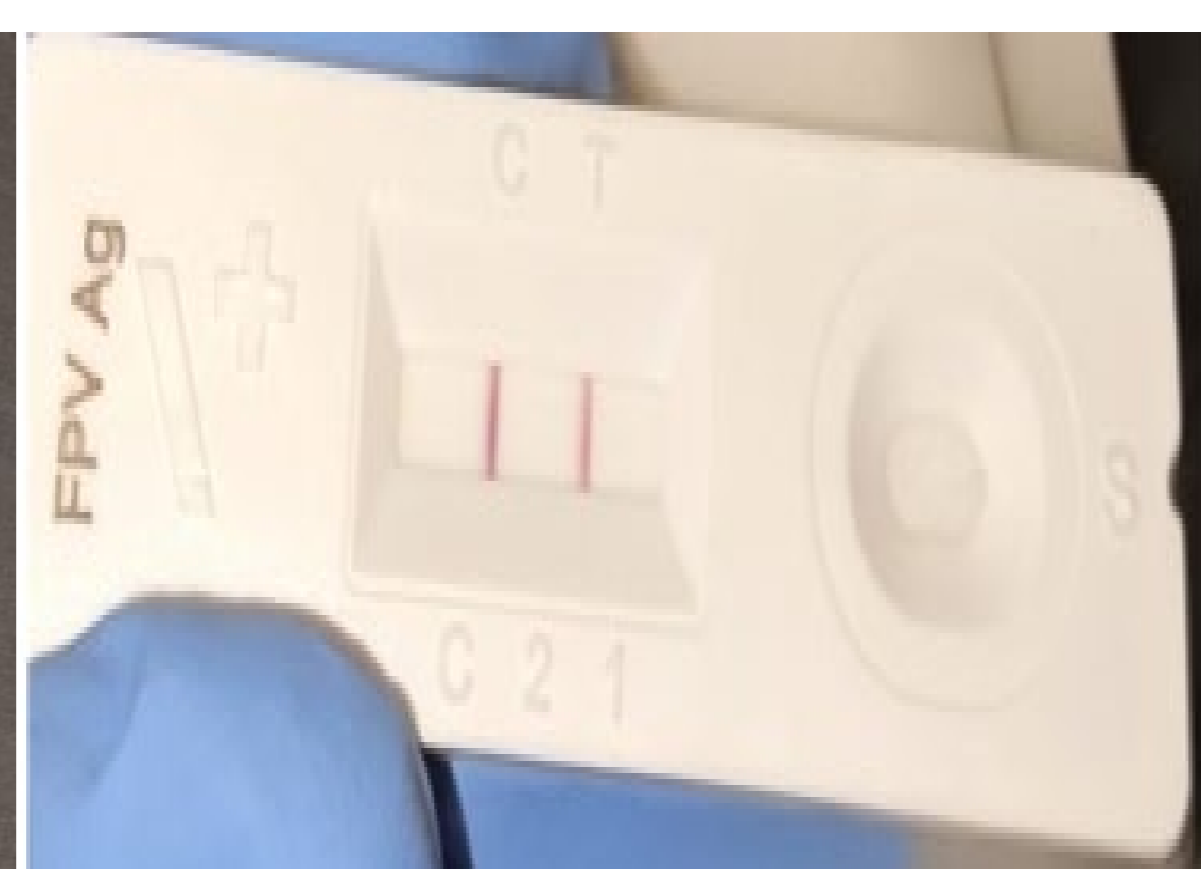
- Five FPV-positive cats showed similar clinical signs, including fever, vomiting, diarrhea, apathy, anorexia, and dehydration.
- The main differences between cases were related to CBC evolution, timing of Feliserin Plus administration, antibody response, and final outcome.
- Three cats survived and two died. In surviving cats, Feliserin Plus was administered during the first day of disease, while non-survivors received treatment after a 2 and 3-day delay.
- The commercial serum was also tested, resulting in a fixed value of approx. 5000UI.
- Cat 2 was brought along Cat 1, by the same owner, after it became apathy and started vomiting. In this case, the delay of treatment was 2 days for Cat 2.
- Cat 4 died after the first day of treatment, after being presented with an estimated 3-day delay from the onset of clinical signs. The rest of the animals (Cat 1, 3 and 5 were brought in the first day after showing symptoms of disease)
- Serial CBC monitoring showed different hematological trajectories: survivors presented leukocyte stabilization, while non-survivors showed persistent or worsening leukopenia.
- These observations suggest that early passive immunotherapy and CBC monitoring may be clinically relevant, but no causal conclusion can be drawn because of the limited number of cases.
- Further studies with larger cohorts and standardized protocols are needed to clarify the therapeutic value of hyperimmune serum in feline panleukopenia



FPV antibody titer dynamics before and after Feliserin Plus administration in cats with feline panleukopenia.

### Conclusions

- All cats showed similar clinical signs: fever, vomiting, diarrhea, apathy, anorexia, and dehydration.
- Differences between surviving and non-surviving cats were mainly observed in CBC evolution, especially leukocyte dynamics.
- Survival was recorded in cats treated with Feliserin Plus during the first day of disease, while delayed administration occurred in non-survivors.
- Serial CBC monitoring was useful for evaluating disease progression and possible recovery.
- Early passive immunotherapy may be clinically relevant, but the small number of cases does not allow causal interpretation.
- Larger studies with standardized protocols are needed to clarify the therapeutic value of hyperimmune serum in feline panleukopenia.



Positive Rapid Antigen Test For FPV

qFLASH biomarker test kit and individually sealed test strip used for antibody assessment in cats with feline panleukopenia.