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TECHNICAL BULLETIN

Parvo Survivor,
Baxter (2 months)
Kentucky Humane Society

Canine Parvovirus Monoclonal Antibody (CPMA) Effective for Passive Immunity (i.e., Parvovirus Prophylaxis)

Studies were recently conducted evaluating the efficacy of CPMA to prevent parvo infections and separately evaluating the impact to vaccination.

- The first study successfully demonstrated the efficacy of CPMA in preventing CPV infection when given subcutaneously at 0.1 mL/kg.[1]
- The second study provided insights regarding the optimal timing for CPV vaccination following the administration of CPMA as a prophylactic therapy in dogs aged 8 weeks.[2]
- The data demonstrates the power of CPMA to help stop parvo before it starts.

Study 1: Passive Immunity Efficacy[1]

The first study involved 25 total dogs of 8 weeks of age

- 20 dogs received CPMA at 0.1 mL/kg given subcutaneously
- 5 dogs received placebo

One day after CPMA administration, all dogs were intranasally (IN) administered virulent CPV-2b

For 14 days following the parvovirus challenge, clinical signs and additional testing was performed including:

- SNAP and HA testing of rectal and fecal samples
- Hematology and antibody testing (hemagglutination inhibition)

Study 1 Results:

- **No CPMA treated dogs developed parvo infection**
- **All dogs in the control group met criteria for CPV infection**

Measure	Placebo (n=5)	CPMA (n=20)
CPV SNAP Test +		
Yes	5 (100%)	1 (5%)*
No	0 (0%)	19 (95%)
Met 3 of 4 criteria of CPV infection**		
Yes	5 (100%)	0 (0%)
No	0 (0%)	20 (100%)
Show >1 criteria of CPV Infection		
Yes	5 (100%)	0 (0%)
No	0 (0%)	20 (100%)

*One CPMA treated dog had low levels of CPV in feces on Study Day 1 prior to parvovirus challenge. This dog had likely exposure and did not show clinical signs throughout the study.

**At least 80% of control dogs must show at least 3 of the 4 criteria of infection—fever, lymphopenia, clinical signs, and viral hemagglutinins (see USDA 9 CFR 113.317 for details).

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Study 2: Vaccination Following Prophylactic CPMA Dosing[2]

Vaccination started on study day 42

- All dogs were vaccinated with MLV DaPPv
- All dogs were boostered every 3 weeks (21 days) until seroconversion

This vaccine involved 20 total dogs at 8 weeks of age

- 13 received CPMA at 0.1 ml/kg subcutaneously
- 7 received control product subcutaneously
- All dogs were maternal antibody negative

All dogs were tested for seroconversion weekly through hemagglutination inhibition (HI) and serum neutralization (SN)

- A four-fold increase or HI titer >80 and SN titers >32 indicates CPV seroconversion
- Seroconversion is tested prior to vaccination. Antibody levels are reflected in following weeks

Study 2 Results:

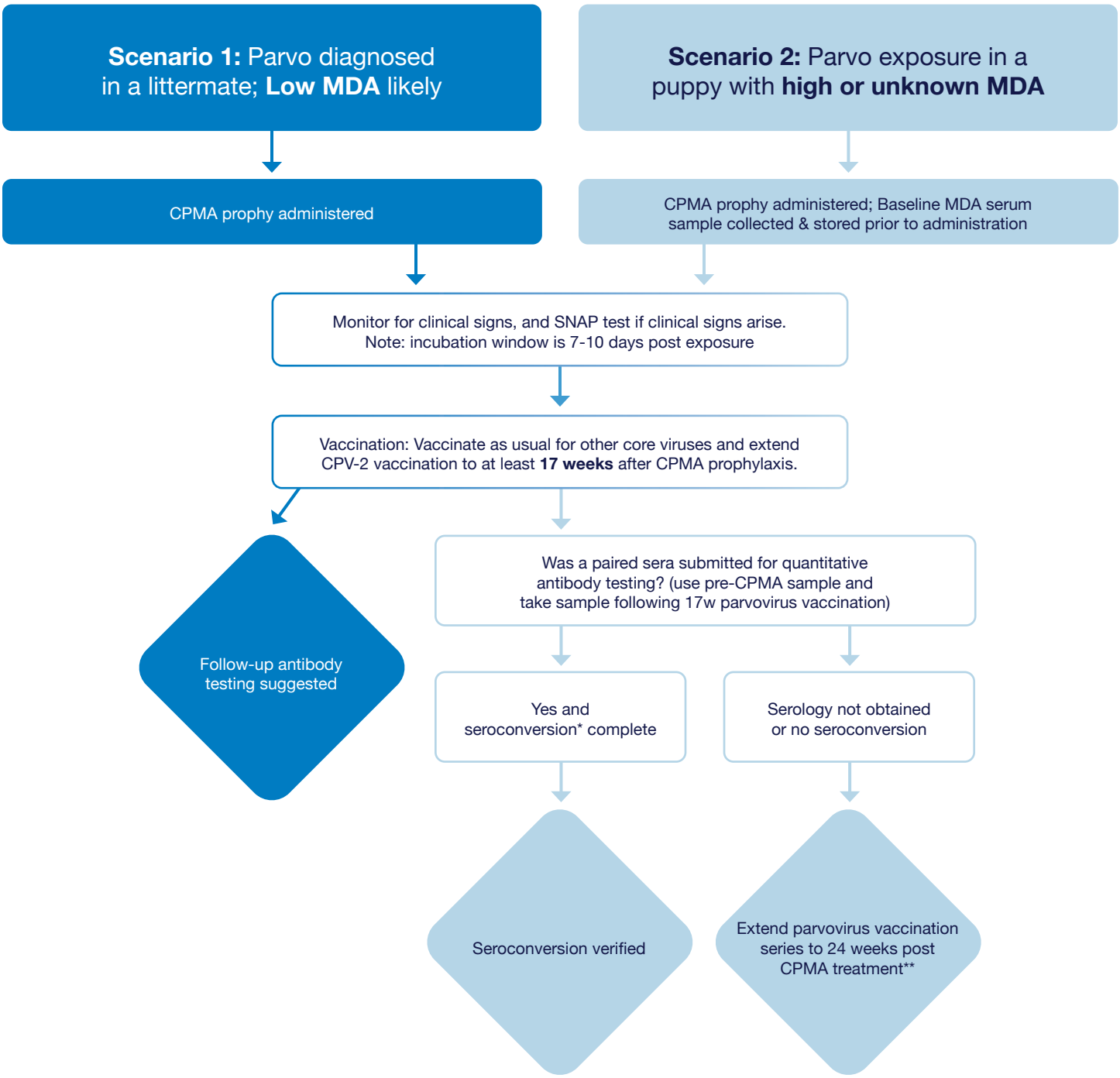
- 100% of control dogs showed seroconversion after a single vaccine dose
- 15 weeks post CPMA dose, 92% of CPMA-treated dogs developed protective antibody levels to CPV (shown by the 18 week mAb seroconversion)
- Extending CPV vaccination until at least 17 weeks after prophylactic administration of CPMA supports optimal active immunization

*Vaccine administered

Clinical Scenarios: Using CPMA Prophylaxis

The below scenarios depict two situations in puppies that had likely exposure, were treated with CPMA prophylactically and remained asymptomatic and SNAP negative. Note that an active infection will incite an immune response, so these patients should be vaccinated based off AAHA or WSAVA guidelines.

Scenario 1 is a littermate to a dog with confirmed or active parvovirus infection, so low MDA (maternally derived antibody) levels are likely. Scenario 2 is from a different litter with high potential parvovirus exposure but no confirmed infection, so MDA level is unknown and may be high. High MDA levels can block seroconversion. In these dogs, extending CPV-2 vaccination to 24 weeks after CPMA treatment should be considered.



*Seroconversion based off 4-fold increase or post vaccine titer >80
**Aligning w/ WSAVA guidelines

Canine Parvovirus Monoclonal Antibody

Stop parvo before it starts

KEY TAKEAWAYS: BOTH STUDIES

- CPMA is effective in treating active CPV infections at an intravenous dosage of 0.2 mL/kg
- CPMA is an effective prophylactic that provides passive immunity against canine parvovirus (CPV) infection at a subcutaneous dosage of 0.1 mL/kg[1]
- Extending CPV vaccination until at least 17 weeks after prophylactic administration of CPMA supports optimal active immunization

Parvo Survivor,
Aiden (2 months)
PAWS Chicago

REFERENCES:

1. Elanco Animal health. Data on file.
2. Elanco Animal health. Data on file.

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