



Review Article
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**Parvovirus infection in Pups and Pattern of Immune Response Elicited:
A Review**

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Abstract

Parvovirus infection is highly infectious and spreads from infected to healthy dogs by direct or indirect contact through their feces. The infection is severe in puppies that are not protected by maternal antibodies or vaccination. It has two distinct presentations, cardiac and intestinal form. Canine parvovirus 2 (CPV2) is a relatively new disease that appeared in the late 1970s. It was first recognized in 1978 and spread worldwide within one to two years.

Keywords: Canine parvovirus, Infection

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1. Introduction

There are 2 types of canine parvovirus called minute virus, CPV 1 and CPV 2 and three antigenic variants of CPV2 called CPV-2a 2b and 2c. Types 2a and 2b are distinct from the original CPV. Canine parvovirus type 2 (CPV2) is a contagious virus mainly affecting growing pups. However, sporadic cases do occur particularly in young population when initial vaccination fails because of interference by maternally derived antibodies¹. There exists a period of about a week when there is not enough maternal antibody to protect puppy but too much to allow a vaccine to work. This period is called the “window of vulnerability”. Therefore, the present study was designed to determine comparative efficacy and overall safety of administration of Megavac 6 vaccine with competitor vaccines, Vanguard 5L and Nobivac DHPPiL in vaccinated animals.

Research based findings of various researchers

Tizard² reported a significant increase in antibody titer on 3 wks of post first vaccination. After 3 weeks of 2nd vaccination, it was observed that a significant decrease in HI antibody titer happened, but was above protective titer

of 1:80. In the control group there was no significant variation between the different days. He concluded from his study that vaccination with Vanguard which contains a CPV2 strain help to protect dog against a virulent infection with CPV 2c-type.

Common problem in vaccinating canines, such as dogs and puppies, is the maternal antibody interference during immunization. Maternal antibody interference is the most common cause of vaccine failure in weaning pups. Maternal antibody neutralizes vaccine and suppresses pup's active immune response. This common immunization problem occurs with all disease, but is of particular concern in the case of CPV's enteritis because of the explosive nature of disease transmission and because pups are at greatest risk of CPV-induced mortality [1].

Wanner *et al.* vaccinated pups with modified attenuated CPV vaccine at 6 and 9 wks of age observed 39% of the pups responded to vaccination at the HI titer is 1:10, 30% of pups at 1:20, 26% at 1:40 and 5% at 1:80 [3].

Bergman *et al.* reported that the puppies vaccinated with commercially available modified live vaccine against CPV, provided adequate protection with final vaccination at 10 weeks age [4].

Reddy *et al.* vaccinated the pups with Megavac 6 and collected serum sample on 720 day post vaccination to assess the serum antibody response and observed the HI titer 600 [5].

2. Conclusion

The disease is both controlled by monovalent an multivalent vaccines.

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