

ASSOCIATION BETWEEN THE PRESENCE OF VT2e NEUTRALIZING ANTIBODIES PRODUCED BY VEPURED® AND PROTECTION OF PIGLETS IN VTEC INFECTIONS

Mallorquí*, J.; Simon-Grifé, M.; Moreno-Crespi, J.; Ferrer-Soler, L.; Roca, M.; Sitjà, M.

* Corresponding author (joaquim.mallorqui@hipra.com)

HIPRA, Amer (Girona), Spain



The Reference
in Prevention
for Animal Health

www.hipra.com

BACKGROUND AND OBJECTIVES

VEPURED® vaccine has been developed to protect piglets against Edema Disease (ED).

The vaccine activates piglets' immune systems, generating seroneutralizing (SN) antibodies against VT2e before they are infected.

In this study, the association between serological immune response and protection against VT2e challenge was analysed.

MATERIALS AND METHODS

A total of 109 clinically healthy piglets, free from VT2e neutralizing antibodies, were vaccinated with 1 mL of VEPURED® (59) or with 1 mL of phosphate-buffered saline (50) (control group).

Subsequently, the piglets were challenged with VT2e (w/t) intravenously and ED clinical signs and mortality were monitored daily.

The presence of VT2e neutralizing antibodies in sera was determined by VERO cell neutralization assay before challenge.

A two-tailed χ^2 test/Fisher's exact test was carried out to examine the association between the presence of VT2e neutralizing antibodies and clinical signs and mortality.

RESULTS

Before challenge, 93.2% of the animals vaccinated with VEPURED® had neutralizing antibodies against VT2e.

After challenge, only 30% of the animals vaccinated with VEPURED® showed ED clinical signs while most of the animals in the control group died (Figure 1).

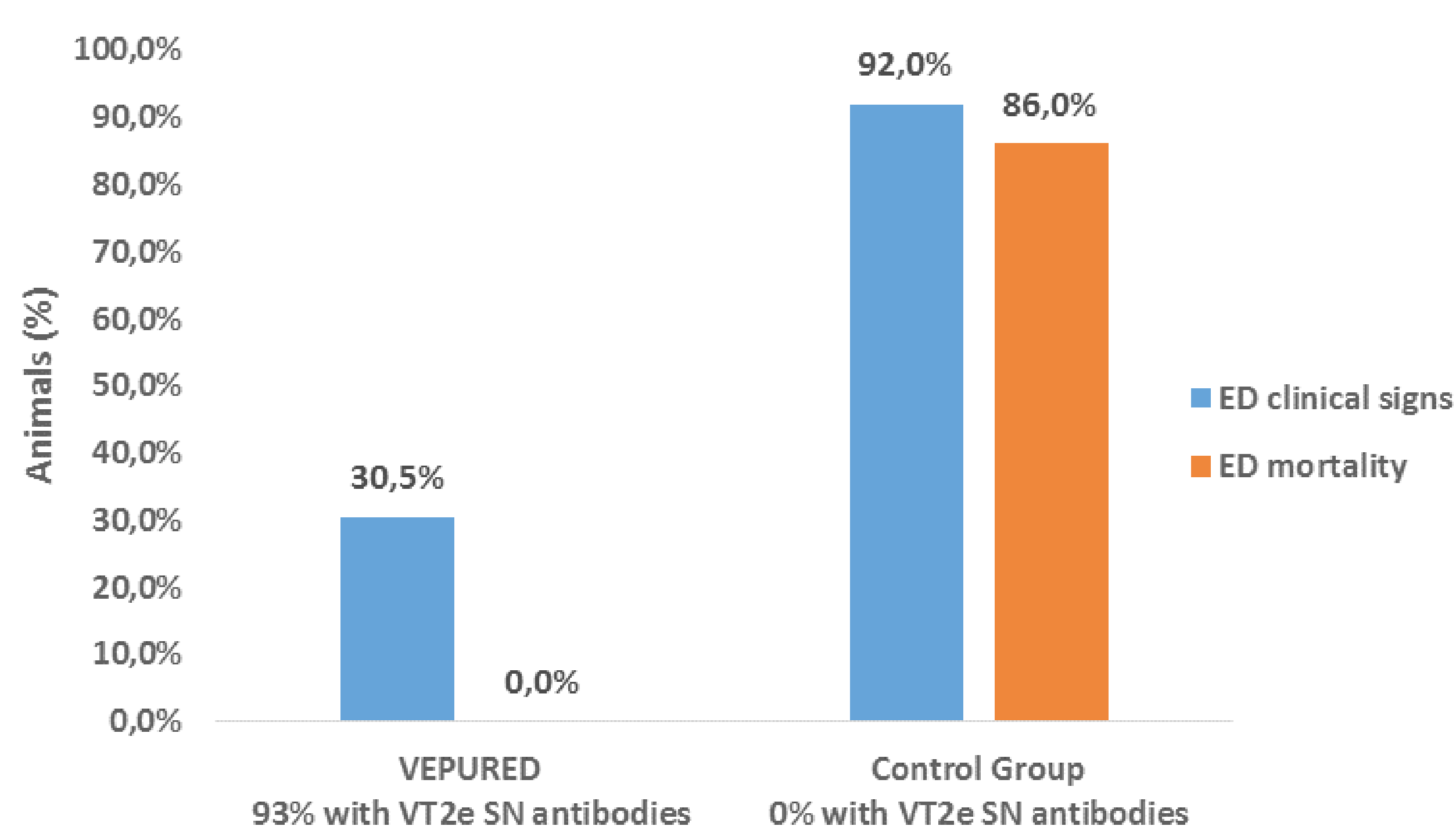


Figure 1. Percentage of animals with ED clinical signs or mortality after challenge.

Regarding clinical signs, 92.5% of the animals without SN antibodies showed clinical signs after challenge (particularly 50 out of 54). However, in the group of animals with SN antibodies only 25.4% showed clinical signs after challenge (particularly 14 out of 55) (Table 1).

		ED Clinical Signs		Total
		+	-	
Neutralizing antibodies	+	14	41	55
	-	50	4	54
Total		64	45	109

Table 1. Relationship between the presence (+) or absence (-) of neutralizing antibodies against VT2e at challenge and the presence (+) or absence (-) of clinical signs after challenge (two-tailed χ^2 test/Fisher's exact test; $p < 0.05$).

In terms of mortality, 79.6% of animals without SN antibodies died after challenge (43 out of 54), whereas none of the animals with SN antibodies died (Table 2).

		ED Mortality		Total
		+	-	
Neutralizing antibodies	+	0	55	55
	-	43	11	54
Total		43	66	109

Table 2. Relationship between the presence (+) or absence (-) of neutralizing antibodies against VT2e at challenge and the presence (+) or absence (-) of mortality after challenge (two-tailed χ^2 test/Fisher's exact test; $p < 0.05$).

DISCUSSION AND CONCLUSIONS

The presence of neutralizing antibodies in piglets vaccinated with VEPURED® is associated with prevention of mortality and reduction of clinical signs due to ED.