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Comparison of humoral antibody titers following intramuscular or transcutaneous administration of Suvaxyn Mh One, a novel *Mycoplasma hyopneumoniae* vaccine
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Introduction : Swine producers are looking towards new methods of injection to produce needle-free meat products. The objective of this trial was to compare humoral antibody titers in pigs vaccinated Suvaxyn Mh One, a novel *Mycoplasma hyopneumoniae* vaccine, via the intramuscular or the transcutaneous route.

Materials and Methods :

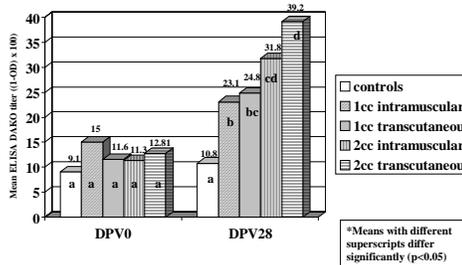
The trial was conducted in a commercial swine herd negative for *Mycoplasma hyopneumoniae*. Sixty pigs approximately 13 weeks of age, with low maternal antibody titers originating from dam vaccination, were randomly allocated to 5 treatment groups : Group 1: Unvaccinated controls, Group 2: Vaccinated with 1cc intramuscularly of Suvaxyn Mh One, Group 3: Vaccinated with 1 cc transcutaneously of Suvaxyn Mh One, Group 4: Vaccinated with 2 cc intramuscularly of Suvaxyn Mh One (label dose) and Group 5: Vaccinated with 2 cc transcutaneously of Suvaxyn Mh One. The gun model used for transcutaneous injections was the Pulse® 250. All pigs were bled at the time of vaccination (DPV0) and 28 days later (DPV28). Serum samples were assayed for antibody using the ELISA DAKO test (Biovet Inc.).

Results:

Results are shown in Figure 1. For the control group, there was no statistical increase of the average antibody titer **over time**, confirming the absence of *Mycoplasma hyopneumoniae* in this herd. There was no statistical difference between groups at the time of vaccination. Groups vaccinated with Suvaxyn Mh One had statistically significant higher post-vaccinal titers than the control group. The 2 cc dose groups stimulated statistically significant higher post-vaccinal titers than their 1cc counterparts. There were no statistical differences between the

transcutaneous groups and their intramuscular counterparts.

Figure 1. Comparison of post-vaccinal titers in pigs vaccinated intramuscularly vs. transcutaneously with Suvaxyn Mh One at different dose regimen



Discussion:

The humoral immune response stimulated by the transcutaneous injection of Suvaxyn Mh One was of the same magnitude as the **response stimulated by** intramuscular injection. Similar results have been shown in other studies using different vaccines.¹⁻² However, to confirm similar protection with Suvaxyn Mh One with the two techniques of injection, challenge studies should be done in pigs. Interestingly, there was a dose effect seen in the humoral response. Half label dose regimens were not as effective as their full dose counterparts in stimulating a humoral response.

Conclusion:

Although extra label, Suvaxyn Mh One injected via the transcutaneous route looks promising in vaccinating pigs to avoid the produce needle-free meat by-products.

References:

1. Gergen et al, 2004. IPVS Proceedings, Paper 108.
2. Thacker et al, 2004. IPVS Proceedings, Paper 548.