



Interest of clostridial vaccination in pregnant cows to reduce omphalitis in beef calves. Results from a field study in France.

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Objective

Several French practitioners reported that the proportion of calves with omphalitis was lower in beef herds that vaccinate pregnant cows against clostridial disease compared to herds that does not vaccinate their pregnant cows. This study was performed to confirm this field observation.



Materials and methods

The study was carried out during two calving campaigns (2016-2017 and 2017-2018) and involved four cattle practitioners located in central France.

Eight herds with an history of high incidence of omphalitis in calves participated in the study and a total of 299 cows were enrolled. In each herd, half of the pregnant cows were randomly selected to be vaccinated or not with a clostridial vaccine (Coglavax®, Ceva Santé Animale). After calving (D0), each calf was evaluated by the farmer at D1, D3 and D5. The attending veterinarian was asked to assess the calves at least once before D14 using a scoring sheet designed to reflect the severity of omphalitis (no omphalitis, mild omphalitis or severe omphalitis requiring parenteral antimicrobial treatment). Routine neonatal and umbilical care were kept as it was in each herd prior to this study. Comparisons were made between calves born from vaccinated pregnant cows and calves born from unvaccinated cows using chi-squared test with a .05 significance level.



Results

	Vaccinal status of the cow	
	Unvaccinated	Vaccinated
Calves with omphalitis	40.7% (44/108)	26.3% (30/114)
Calves without omphalitis	59.3% (64/108)	73.7% (84/114)

Number of calves with omphalitis or without according to the vaccination status of the dam (P=0.02)

	Vaccinal status of the cow	
	Unvaccinated	Vaccinated
Calves with severe omphalitis	25.0% (27/108)	8.8% (10/114)
Calves with mild or without omphalitis	75.0% (81/108)	91.2% (104/114)

Number of calves with severe omphalitis (necessity of a parenteral antimicrobial treatment) or without severe omphalitis according to the vaccination status of the dam (P=0.001)

- A total of 222 calves were included in the study; 114 born of vaccinated cows (group V) and 108 of unvaccinated cows (group U).
- A significant difference was found regarding the prevalence of omphalitis. In group V, the prevalence of omphalitis was 26.3% (n=30) compared to 40.7% (n=44) in group U (P = 0.02).
- The difference between calves from group V and U was even more important for severe omphalitis, with a prevalence of 8.8% (n=10) in group V vs. 25.0% (n=27) in group U (P = 0.001).

Conclusions

- Results from this field study confirm cattle practitioner's observation and support the fact that clostridial vaccination of pregnant cows can be beneficial to reduce the prevalence of calf omphalitis.
- The interest of this clostridial vaccination seems particularly relevant for cases of severe omphalitis that generally require large spectrum antibiotic treatment. As such, this preventive strategy can contribute to reduce the consumption of antibiotic in beef herds with a high incidence of omphalitis.
- Future studies should be carried out to further investigate the relative importance of Clostridia and of other pathogens implicated and the potential benefits of clostridial vaccination in the various type of omphalitis.