

Ileitis Treatment

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There are two distinct scenarios that have to be considered regarding a significant ileitis clinical presentation in a herd.

ACUTE FORM

The first scenario is when you are having an outbreak with significant clinical signs characterized by diarrhoea and mortality.

This situation is mostly observed in herds with the acute or haemorrhagic form of the disease. Once the diagnosis of the disease has been confirmed, based on clinical-pathological findings, an aggressive medication protocol must be implemented.

Sick animals will have to be injected with effective antimicrobial drugs. Moreover, the whole batch of animals should receive soluble antimicrobials in the drinking water for five to seven days and be re-evaluated. Frequently, a follow-up is needed with antimicrobials in the feed for another two weeks.

The treatment of outbreaks of the acute form of the disease is very frustrating, as animals showing clinical signs are around the second week of the disease since the infection. As a result, the survival rate of sick animals is not very high, and pigs will still die for the next 7 to 10 days, no matter what is done.

There are many different antimicrobials that are effective against the *L. intracellularis* infection, with different presentations (injectable, soluble or as a feed additive). There are many studies that used experimentally challenged pigs that showed the effectiveness of macrolides, lincosamides, chlortetracycline and pleuromutilin against *L. intracellularis* (McOrist et al., 1996, 1997, 1999; Winkelman, 1996; McOrist & Morgan, 1998; França & Guedes, 2008; Guedes et al., 2009; França et al., 2010).

As mentioned in the previous articles, those outbreaks of the acute form of the disease are usually associated with the massive use of antimicrobials in the earlier production phases of those pigs, which did not allow any contact of the animals with the infectious agent, and consequently, there was no development of immunity.

Also, new stocks of animals are at a higher risk of presenting ileitis issues, due to the fact that 100% of the dams are gilts.

CHRONIC FORM

The second scenario is characterized by an increased clinical presentation of greenish pasty diarrhoea in growing pigs, associated to a few isolated cases of haemorrhagic diarrhoea and a slight increase in the mortality rate.

The detection of gross lesions suggestive of ileitis is either followed by laboratory confirmation and treatment or treatment to significantly reduce diarrhoea and stop mortality.

The fastest and more efficient treatment protocol in these situations is the utilization of soluble antimicrobials in the drinking water, as sick animals reduce their feed intake. As mentioned above, different antimicrobials can be chosen with good results, such as tiamulin (McOrist *et al.*, 1996; Palzer *et al.*, 2001), tylosin (Normand *et al.*, 2002), tylvalosin (França & Guedes, 2009), chlortetracycline (Collins *et al.*, 2001), doxycyclin (Kyriakis *et al.*, 2002), lincomycin (Wilkeman *et al.*, 2002) and leucomycin (Guedes *et al.*, 2009).

Again, herds with this type of presentation are probably having an irregular or delayed exposure of pigs to *L. intracellularis*, and consequently, the development of severe cases of the disease.

IN VITRO ANTIMICROBIAL SENSITIVITY

There is no indication that *L. intracellularis* can develop resistance to any antimicrobial. Considering the few publications on the in vitro antimicrobial sensitivity of *L. intracellularis* isolates (McOrist *et al.*, 1985; Watanaphansak *et al.*, 2009; Yeh *et al.*, 2011), it is easy to see some discrepancies regarding in vitro and in vivo susceptibility, as some molecules did not show good results in vitro, but the in vivo trials showed a good efficacy. Tylosin and lincomycin are good examples of that.

However, a much bigger concern was raised by Watanaphansak *et al.* (2009) (Fig. 1), that when comparing the more diverse *L. intracellularis* isolates in their archives, they demonstrated differences in sensitivity among isolates for the same antimicrobials.

As a result, more studies have to be conducted to better understand the antimicrobial sensitivity of different *L. intracellularis* strains around the world.

TABLE 1.

Summary of intracellular and extracellular MIC endpoints for six antimicrobial agents 10 *L. intracellularis* isolates, six obtained from North America and four from Europe, measured by using tissue culture system with 5 days of incubation.

Strains of LI	Country of origin	Year	N°. of passage	Antimicrobial Agents											
				Carbadox		Clortetraciclina		Tylosin		Lincomicina		Tiamulina		Valnemulin	
				Intra MIC ^a	Extra MIC ^b	Intra MIC	Extra MIC	Intra MIC	Extra MIC	Intra MIC	Extra MIC	Intra MIC	Extra MIC	Intra MIC	Extra MIC
PHE/MN 1-00	USA	2000	169 170	0.125 0.25	16 16	8 4	64 32	8 2	64 64	>128 >128	>128 >128	0.125 0.125	4 8	0.125 0.125	0.25 0.25
VPB4	USA	1991	165 166	0.25 0.25	32 32	4 16	64 64	8 32	128 128	>128 >128	>128 >128	0.125 0.5	32 8	0.125 0.125	2 0.25
KKumn04	USA	2004	17 18	0.125 0.125	4 4	32 16	32 64	0.5 0.25	1 1	16 16	>128 >128	0.125 0.125	1 1	0.125 0.125	0.125 0.125
NWumn05	USA	2005	21 22	0.125 0.125	16 8	64 64	64 64	8 4	>128 128	>128 >128	>128 >128	0.125 0.125	16 8	0.125 0.125	4 1
DBumn06	USA	2006	8 9	0.125 0.125	4 4	0.125 0.125	32 32	4 4	128 128	>128 >128	>128 >128	0.125 0.125	4 8	0.125 0.125	0.25 0.25
45216-06	USA	2006	7 8	0.125 0.125	8 8	64 64	64 64	2 2	64 64	>128 >128	>128 >128	0.125 0.125	8 4	0.125 0.125	0.5 0.5
D15540	Den	1998	19 20	0.125 0.125	4 4	0.25 0.25	64 32	1 0.5	4 2	32 16	>128 128	0.125 0.125	4 2	0.125 0.125	0.125 0.125
LR189/5/83	UK	1983	14 15	0.125 0.125	1 1	0.5 0.5	64 64	1 1	16 16	16 16	>128 >128	0.125 0.125	4 4	0.125 0.125	0.125 0.125
963/93	UK	1993	35 36	0.125 0.125	1 1	16 8	32 32	1 1	4 4	8 8	64 64	0.125 0.125	2 2	0.125 0.125	0.25 0.25
916/91	UK	1991	16 17	0.125 0.125	1 1	8 2	64 16	2 0.5	4 2	64 8	64 32	0.125 0.125	2 1	0.125 0.125	0.125 0.125

TREATMENT VS PREVENTION

It does not matter the type of clinical presentation, either acute or chronic, that you might face in a herd: the treatment of ileitis outbreaks is necessary in order to reduce losses.

However, as these outbreaks usually occur in growing-finishing pigs, medication is always costly and you also have the economic impact of the reduced growth and mortality.

Also, there is not a specific treatment for the subclinical form of the disease.

If there is a suspicion that the subclinical form of ileitis is having an impact on the farm, the solution requires a preventive approach.

As a result, prevention is the ideal way to control ileitis, which will be the topic of the next article.