Supplementary Table S1. Calves clinical scoring of both N acetyl cysteine (NAC) groups before treatment.

		n	Mode	Median	Coefficient of variation	IQR	Minimum	Maximum
Nasal discharge	Control	20	2.000	2.000	0.365	1.000	1.000	3.000
	NAC	20	2.000	2.000	0.374	1.000	1.000	3.000
Ocular discharge	Control	20	1.000	1.000	0.280	0.000	1.000	2.000
	NAC	20	1.000	1.000	0.319	0.000	1.000	2.000
Cough	Control	20	2.000	2.000	0.109	0.000	2.000	3.000
	NAC	20	2.000	2.000	0.109	0.000	2.000	3.000
Ear position	Control	20	1.000	1.000	0.415	0.000	0.000	2.000
	NAC	20	1.000	1.000	0.497	0.000	0.000	2.000
Temperature score	Control	20	1.000	1.500	0.452	1.000	1.000	3.000
	NAC	20	1.000	1.000	0.490	1.000	1.000	3.000
Total score	Control	20	6.000	7.000	0.210	2.000	5.000	11.000
	NAC	20	6.000	7.000	0.209	2.000	5.000	11.000

Supplementary Table S2. Comparison of clinical parameters among two groups before treatment.

	W	p
Nasal discharge	224.50	0.47
Ocular discharge	190.00	0.65
Cough	200.00	1.00
Ear position	209.50	0.72
Temperature score	217.00	0.62
Total score	219.50	0.60
Weight	212.00	0.75
Temperature (°C)	224.50	0.52
Mann-Whitney U test.		

Supplementary Table S3: There is a statistically significant difference in time to resolution period between the N-acetylcysteine supplemented group and control group of calves diseased from pneumonia.

	W	p
Time to resolution	**352.00**	**<0.001**
Mann-Whitney U test.		

Supplementary Table S4. Linear regression summary for dependent variable: Time to resolution.
The beginning of linear regression model.

	R= .92414373 R^2= .85404163 Adjusted R^2= .81637496 F(8,31)=22.674 p					
N=40	b*	Std.Err. of b*	b	Std.Err. of b*	t (31)	p-value
Intercept			-1248.97	328.73	-3.80	0.00
Group	-0.56	0.07	-27.63	3.48	-7.95	0.00
Ocular discharge	0.01	0.09	1.11	6.83	0.16	0.87
Cough	0.04	0.08	5.05	9.72	0.52	0.61
Ear position	-0.01	0.11	-0.75	6.44	-0.12	0.91
Temp score	-0.13	0.21	-4.27	6.97	-0.61	0.54
Total score	0.16	0.23	2.62	3.73	0.70	0.49
Weight	0.02	0.08	0.15	0.48	0.31	0.76
Temp (C)	0.66	0.17	31.93	8.19	3.90	0.00