

Does Subclinical Mastitis Interfere With The Diagnosis Of Subacute Rumenal Acidosis (SARA) Based On Inflammatory Proteins In The Blood?

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The measurement of the pH of rumen fluid, collected either with a stomach tube or by rumenocentesis, is used for the diagnosis of SARA. However, this technique is not accurate and can cause health problems to the cows. It has been shown that experimentally induced SARA causes inflammation, which is shown by increases in inflammatory proteins, such as serum amyloid-A (SAA) and haptoglobin (Hp), in the blood. This suggests that the measurement of these proteins in the blood may help in the diagnosis of this disease. Mastitis also causes inflammation, and may, therefore, also increase SAA and Hp. Such an effect on SAA and Hp would limit the accuracy of the diagnosis of SARA based on these proteins. It is, therefore, important to determine the relationships between somatic cell counts (SCC), SAA, and Hp. This was achieved by carrying out a survey on 200 lactating dairy cows on commercial dairy farms. Farms were visited once for the collection of blood samples, composite milk samples, and rumen fluid samples by rumenocentesis. The pH of rumen fluid samples was measured. Milk samples were analyzed for SCC. Blood was analyzed for SAA and Hp.

The average pH of rumen samples was 6.67 ± 0.44 (mean \pm SD). A rumen pH below 5.5 in rumen fluid collected by rumenocentesis indicates SARA. The rumen pH data, therefore, show that the prevalence of SARA in his survey was low, and that the survey data cannot be used to determine the relationships between SARA, SAA, and Hp. The SCC ranged from 41,858 to 3,940,000, and averaged 220,000. Despite the high SCC of several cows that indicated subclinical mastitis, SCC was not correlated with SAA and Hp.

Implications: The measurement of the concentrations of inflammatory proteins such as serum amyloid A (SAA) and haptoglobin (Hp) in blood has been suggested for the diagnosis of SARA. However if these concentrations are also affected by somatic cell counts (SCC), then this diagnosis would not be accurate. Despite the high SCC of many cows that indicated subclinical mastitis, a relationship between SCC, SAA and Hp was not found.