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Analysis of inflammatory indicators in Hanwoo calf (Korean indigenous calf) diarrheaSukhan Jung¹, J H Kang¹, J B Chae², S H Kim³, A Cho³, Y H Jung³, C Y Choe³, J G Yoo³, D H Yu⁴, K S Choi⁵, H C Kim⁶, B K Park⁷, J S Chae² and J Park¹¹Chonbuk National University, South Korea²Seoul National University, South Korea³National Institute of Animal Science, South Korea⁴Gyeongsang National University, South Korea⁵Kyungpook National University, South Korea⁶Kangwon National University, South Korea⁷Chonnam National University, South Korea

Background & Aim: Diarrhea in calves is a complicated disease with abnormal proliferation of bacteria, viruses and parasites in the digestive tract. It causes injury to mucosal wall as well as to interrupt absorption of nutrients, electrolytes or water resulting in abnormal bowel movements. Thus it accounts for the highest mortality rate of Hanwoo calves. In this study, the fecal samples collected from the farm were visually evaluated to determine diarrhea and then compared the level of cytokine and acute phase protein (APP) in serum.

Methods: Feces and blood sample were collected from 115 cattle aged between 1-90 days (average 34 days) from Korean cattle farms. They were then classified into 4 phases according to feces type and major inflammatory index indicators of acute response proteins (APPs) such as serum amyloid A (SAA), haptoglobin and pro-inflammatory cytokines (IL-6, TNF α) were analyzed.

Results: The fecal types of 115 calves were divided into solid (35 calves), semi-solid (38 calves), loose (32 calves) and watery types (10 calves). Acute phase proteins were increased in liquid fecal types, showing higher SAA and haptoglobin in loose or watery type compared to solid type ($P < 0.05$). Also, the result of cytokine analysis revealed that cytokine increased when fecal type changed from solid to watery type ($P = 0.034$ for IL-6, $P = 0.039$ for TNF- α). Eventually, the increase in acute phase protein and cytokine showed strong correlation with changes to more liquid fecal type.

Conclusions: When the fecal type changes from solid to watery in calf diarrhea, internal factors such as APPs and cytokine level showed to be increased. APPs and cytokines should be potential biomarkers of treatment and monitoring calf diarrhea.

Biography

Sukhan Jung is a Researcher of Veterinary Medicine at Chonbuk National University, South Korea. She has graduated from the Veterinary Science Graduate School of Chonnam National University and recently been participating in research related to health care and disease prevention of large animals.

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